

**NO CHILD LEFT BEHIND: HOW INNOVATIVE  
EDUCATORS ARE INTEGRATING SUBJECT  
MATTERS TO IMPROVE STUDENT ACHIEVEMENT**

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**HEARING**

BEFORE THE

**COMMITTEE ON EDUCATION  
AND THE WORKFORCE  
U.S. HOUSE OF REPRESENTATIVES**

ONE HUNDRED NINTH CONGRESS

SECOND SESSION

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IMPROVE STUDENT ACHIEVEMENT**

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**Thursday, May 18, 2006  
U.S. House of Representatives  
Committee on Education and the Workforce  
Washington, DC**

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The committee met, pursuant to call, at 10:03 a.m., in room 2175, Rayburn House Office Building, Hon. Howard McKeon [chairman of the committee] presiding.

Present: Representatives McKeon, Castle, Ehlers, Biggert, Osborne, Wilson, Porter, Kline, Inglis, Fortuno, Foxx, Miller, Kildee, Scott, Woolsey, McCarthy, Tierney, Kind, Holt, Davis of California, McCollum, Grijalva, and Bishop.

Staff present: James Bergeron, Counselor to the Chairman; Amanda Farris, Professional Staff Member; Ray Grangoff, Legislative Assistant; Jessica Gross, Press Assistant; Richard Hoar, Professional Staff Member; Kimberly Ketchel, Deputy Press Secretary; Lindsey Mask, Press Secretary; Chad Miller, Coalitions Director for Education Policy; Deborah L. Emerson Samantar, Committee Clerk/Intern Coordinator; Toyin Alli, Staff Assistant; Alice Cain, Legislative Associate/Education; Denise Forte, Legislative Associate/Education; Lauren Gibbs, Legislative Associate/Education; Lloyd Horwich, Legislative Associate/Education; Joe Novotny, Legislative Assistant/Education; and Mark Zuckerman, Staff Director/General Counsel.

Chairman McKEON [presiding]. A quorum being present, the Committee on Education and the Workforce will come to order.

We are holding this hearing today to hear testimony on “No Child Left Behind: How Innovative Educators Are Integrating Subject Matter to Improve Student Achievement.”

With that, I ask unanimous consent for the hearing record to remain open 14 days to allow member statements and other extraneous material referred to during the hearing to be submitted in the official hearing record. Without objection, so ordered.

Good morning. I thank my colleagues for joining me at the first in our new series of hearings on the landmark No Child Left Behind Act. Over the past several years, our panel has held numerous hearings on the implementation and impact of this historic reform law. Those hearings have proven essential for this committee in the

early years of the No Child Left Behind era, and we learned a great deal from them.

Today, we are launching a fresh, bipartisan effort during which we will examine many critical aspects of the law. These hearings will focus on the four essential pillars of education reform: accountability, flexibility and local control, funding for what works, and expanded parental options. And because next year's reauthorization of No Child Left Behind may be the most important law we will ever see, I am confident these discussions will prove valuable for all of us.

I am especially eager to work with and listen to each of my committee colleagues during this effort, including our committee's senior Democrat, Mr. Miller; the Education Reform Subcommittee's chairman, Mr. Castle; and the ranking member on that panel, Mrs. Woolsey. I am pleased they are joining me in spearheading these hearings.

Today's hearing will examine the impact of No Child Left Behind's focus on reading and math instruction, as well as what creative educators are doing to incorporate a wide variety of subjects into their classroom instruction.

Initial results show No Child Left Behind is working to improve student achievement and reduce the achievement gap between disadvantaged students and their more fortunate peers. Long-term trend data released last summer reveals significant improvements in overall student achievement, with noteworthy gains among minority students. And according to data presented to Congress by the Council of the Great City Schools, urban students have posted higher math and reading scores on state tests since No Child Left Behind was signed into law.

Some have raised concerns that our initial success in improving achievement in math and reading has narrowed the curriculum in many of our nation's schools. I disagree.

First, math and reading comprise the foundation for any sort of academic success, regardless of subject matter. But more importantly, there are scores of men and women across the country using innovative methods to teach reading and math, while also maintaining a rich curriculum in other areas. Some of those men and women are here today, and I am eager to hear about their efforts, some of which will be on display this morning.

I believe today's hearing will be an example of the deliberate, responsible examination of the facts that we will see in the remaining hearings in this series. At the outset, we know this: after decades of failed reform efforts, coupled with hundreds of billions of taxpayer dollars spent with little or no success in closing the achievement gap, the impact of No Child Left Behind has been dramatic and a positive step forward for students, teachers, parents, and taxpayers. We can't and won't take a step back.

Mr. Miller has been a real leader in this effort, and he has had to take some very courageous stands against some of his natural constituents. He has been on this committee a lot longer than I have, and he has seen the money that has been spent. I know in a lot of meetings we had and the hearings and all the things we did in writing this law, it was a real pleasure working with him. I am really excited about it as we go forward in the reauthoriza-

tion. I look forward to our discussion. I am eager to hear thoughts from our witnesses.

With that, I yield to Mr. Miller for his opening statement.  
[The opening statement of Chairman McKeon follows:]

**Prepared Statement of Hon. Howard P. “Buck” McKeon, Chairman,  
Committee on Education and the Workforce**

Good morning. I thank my colleagues for joining me at the first in our new series of hearings on the landmark No Child Left Behind Act. Over the past several years, our panel has held numerous hearings on the implementation and impact of this historic education reform law. Those hearings have proven essential for this Committee in the early years of the No Child Left Behind era, and we learned a great deal from them.

Today, we are launching a fresh, bipartisan effort during which we will examine many critical aspects of the law. These hearings will focus on the four essential pillars of education reform: accountability, flexibility and local control, funding for what works, and expanded parental options. And because next year’s reauthorization of No Child Left Behind may be the most important the law will ever see, I am confident these discussions will prove valuable for all of us.

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Mr. MILLER. Thank you, Mr. Chairman.

And thank you so much for beginning this series of hearings in advance of the reauthorization next year. I think it is important. I think it gives us an opportunity and the time to hear from those people who are on the frontlines trying to make No Child Left Behind work, and also those who are having difficulty with it, and some of that for very sound reasons. We should pay attention to all of these comments.

As one of the original co-authors of No Child Left Behind, I get asked a lot about NCLB’s future. Our challenge with reauthorization next year will be to maintain the core values of the law, that

is closing the achievement gap, helping all children become proficient in the knowledge and the skills that they need at grade-level and to graduate, and making sure that they have a highly qualified teacher in their classrooms, while still being responsive to the legitimate concerns that have been raised.

No Child Left Behind is making a difference. School districts across the country that have taken the goals of this law to heart and are working to improve the academic achievement of their children. The achievement gap is closing between African American and white children, between Hispanic and white children, between high-and low-income children, and we are making progress in many school districts.

However, we can do better. The criticisms we hear are valid in many instances. I look forward to hearing from teachers and parents, students and principals, and superintendents and others on how we can address them. One of the criticisms that we hear about No Child Left Behind is that it focuses on reading and math for accountability purposes, and that leads educators to narrow the curriculum focusing on these subjects at the expense of others.

I have visited a number of schools, however, where this concern has been raised, including most recently schools in South Dakota, in Pine Ridge on the Rosebud Reservation. I also saw educators who were integrating curriculum in exciting ways, such as the ones the teachers and students were using media and video and movies to learn important math concepts in the process.

I was pleased that the National Indian Education Association has provided written testimony for today's hearing and thank them for reminding the committee and the members and the stakeholders that NCLB explicitly recognizes the unique educational and culturally related academic needs of Native American children. There is a great interest in hearings on the impact of NCLB on Native American children. I look forward to taking a closer look at that issue during reauthorization.

It is important for us to acknowledge that NCLB has put pressure on educators to re-think their curriculum and to sometimes make tough choices. If a child is not proficient in reading, I think we would all agree that it is urgently important and in the best interest of that child for his or her school to prioritize reading and do whatever it takes to make sure that he or she learns this most basic skill.

Without mastering reading, the child will be hard-pressed to understand their social studies text and other subjects. They will be hampered in numerous ways throughout life. Most would agree, however, that we do not want this increased focus on reading to come at the expense of history, social studies, arts and other subjects that add balance and richness to the learning experience.

We also need to acknowledge that the creative and innovative educators across this country, who are represented on this panel today, are thinking creatively and finding ways to make sure that it is not an either/or proposition for students, not reading or history or math or music. These educators are finding innovative ways to make sure that their students get the best of all subjects and their achievements are soaring in these schools.



One thing in particular that I will be listening for today is what we in Congress can do during the reauthorization is how we avoid that either/or choice. And I would hope that our panelists would be able to explain to us how they have been able to do that. We have to think how we can encourage and make this more feasible for educators to think in creative, innovative and successful approaches to follow what we will hear today.

And, Mr. Chairman, I want to say that I think this is a very positive beginning to the reauthorization process, that we will hear those who have been successful in the process, those who are struggling, and those who are making attempts but haven't quite figured it out yet, so that we can make sure that this law works for all of the districts and certainly for all of our children.

Thank you very much.

**Prepared Statement of Hon. George Miller, Ranking Minority Member,  
Committee on Education and the Workforce**

Good morning. I want to thank Chairman McKeon for scheduling today's hearing and starting the process of reviewing No Child Left Behind. It has been over four years since we enacted this law and I am eager to hear from our panelists about how it has worked for them and, most importantly, for their students.

As one of the original authors of No Child Left Behind, I get asked a lot about NCLB's future. Our challenge with reauthorization next year will be to maintain the core values of the law—closing the achievement gap and helping all children become proficient in the knowledge and skills they need to graduate—while still being responsive to legitimate concerns.

No Child Left Behind is making a difference. School districts across the country have taken the goals of this law to heart and are working to improve academic achievement for their students.

The achievement gap is closing between African American and white children, between Hispanic and white children, and between high- and low-income children. We are making progress in many school districts.

However, we can do better. The criticisms we hear are valid in many instances and I look forward to hearing from teachers, parents, students, principals, superintendents, and others about how we can address them.

One of the criticisms that we hear about NCLB is that its focus on reading and math for accountability purposes leads educators to narrow the curriculum, focusing on these subjects at the expense of others. I have visited a number of schools where this concern has been raised including, most recently, schools in South Dakota on the Pine Ridge and Rosebud Indian Reservations.

But I also saw educators there who were integrating curriculum in exciting ways—such as one teacher whose students were making their own movies, and learning important math concepts in the process.

I am pleased that the National Indian Education Association has provided written testimony for today's hearing and thank them for reminding committee Members and stakeholders that NCLB explicitly recognizes the unique educational and culturally-related academic needs of Native American children. There is great interest in hearings on the impact of NCLB on Native American children and I look forward to taking a close look at this issue during reauthorization.

It is important for us to acknowledge that NCLB has put pressure on educators to rethink their curriculum and to sometimes make tough choices. If a child is not proficient in reading, I think we would all agree that it is urgently important—and in the best interest of that child—for his or her school to prioritize reading and do whatever it takes to make sure he or she learns this most basic of skills.

Without mastering reading, a child will be hard-pressed to understand their social studies text, or other subjects—and they will be hampered in numerous ways throughout life. Most would agree, however, that we do not want this increased focus on reading to come at the expense of history, social studies, the arts, or other subjects that add balance and richness to the learning experience.

We also need to acknowledge the creative and innovative educators across the country—who are represented by our panel today—who are thinking creatively and finding ways to make sure that it's not an "either-or" proposition for their students—not reading or history, or math or music.

These educators are finding innovative ways to make sure their students get the best of all subjects and their achievement is soaring at these schools.

One thing in particular that I will be listening for today is what we in Congress can do during the reauthorization to prevent schools from feeling that they must choose the “either-or” approach.

We must also think about how we can encourage—and make it more feasible—for more educators to take creative, innovative, and successful approaches like those we will hear about today.

Nothing we will do on this committee is more important than ensuring that we live up to No Child Left Behind’s promise of opportunity and a quality education for every child.

I appreciate all that each of our panelists are doing to make this a reality and look forward to hearing from you.

Thank you Mr. Chairman.

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Chairman McKEON. Thank you. I am happy to hear you talk about visiting Pine Ridge and Rosebud, South Dakota, North Dakota, those areas where my younger brother years ago was a missionary for our church, and he served in that area. I remember him telling me stories about the problems they had. He has since passed away a few years ago. I wish he were still here. I wish he could talk to you about some of those things.

Mr. MILLER. A lot of challenges, but there are some fascinating things going on in some of those isolated small schools.

Chairman McKEON. That is great.

I yield now to my good friend, the chairman of the Subcommittee on Education Reform, Mr. Castle.

Mr. CASTLE. Thank you, Mr. Chairman.

I am also excited to be here this morning for the first of our upcoming hearings on No Child Left Behind. Let me clarify that, because we have had I think about 10 hearings on the implementation of No Child Left Behind. We are now entering into a stage of preparing for the reauthorization of No Child Left Behind with a series of hearings which we have announced.

I am also excited to hear from all of our witnesses, all of whom have done exemplary things in education and who took time out of their schedules to be with us today. We thank you.

Over the course of the past several years, I have often argued that we are encountering one of the most exciting times in education. I have said this and continue to say this for a couple of reasons. First, we are all engaged as a country on closing the achievement gap. This conversation is happening at all levels of government, among parents, academics and especially in our school systems. This dialog and support is key and provides necessary momentum.

Second, which will be highlighted today, is the fact that our educators are not shying away from the demands of No Child Left Behind. Over the course of my visits to schools and in almost every press report, I hear about a teacher, administrator or parent who has done something to raise the achievement level of students in their lives. We must all remember that ultimately the point of No Child Left Behind is the needs of our students.

One of my visits took me to Laurel, Delaware, where I met Garrett Lydic, who is here to testify before us today. I do not want to give away any of his testimony, but as soon as I saw him in the

classroom with the students, I knew that I wanted to share what I saw with my colleagues.

Quickly, I learned that innovative teaching methods and integration are happening in many schools across the country. What is interesting, and we sometimes don't think about in education, is that in our everyday lives we integrate various subject areas. Think about your day and you will notice that it is rare that you ever sit down to a task and focus solely on math or history of whatever. Not only is integration realistic and yet another way to make learning fun, but it defies those who believe that No Child Left Behind narrows curriculum.

I look forward to hearing from all of you and thank you for being with us today. After years of implementation, we have reached a point where we are able to both discuss implementation of No Child Left Behind, as well as the impending reauthorization. I want to thank Chairman McKeon for working with me when deciding our list of hearings. I look forward to working under your chairmanship in highlighting No Child Left Behind successes and identifying ways in which we may be able to improve the law. Because one thing is for sure, it is here to stay.

Finally, I would like to recognize Ranking Member Miller's staunch support of the law. I very much look forward to our continued partnership.

I yield back.

Chairman MCKEON. Thank you.

I now recognize my fellow Californian and the ranking member on the subcommittee, Ms. Woolsey.

Ms. WOOLSEY. Thank you, Mr. Chairman, and thank you for beginning this series of hearings on next year's reauthorization of the Elementary and Secondary Education Act.

I also want to thank Ranking Member Miller and subcommittee chairman, Mr. Castle, because I look forward to working with all of you in recognizing what needs to be rewritten in the No Child Left Behind law and keeping what is working absolutely as solid as we can.

We must ensure that each child receives a world-class education and we know that that is the right thing to do for every single child in this country. We know that it is an investment in our country's future.

The president and the Congress, however, have underinvested in the No Child Left Behind Act by more than \$40 billion. In fact, the only thing about No Child Left Behind funding that has increased every year is the gap between what the president and the Congress promised our children and what they have provided our children.

So we need to keep ourselves accountable and keep our promise to fully fund No Child Left Behind. But we also have to ask hard questions about the law itself. We all agree with the law's goal of closing the achievement gap and the increased public focus on that issue has been extremely positive throughout the nation. But we must ask whether beyond highlighting the problems, this law is helping schools to fix the problems.

I look forward to hearing testimony today and in the coming months from students, parents, teachers, principals, administrators, those who actually deal with this every single day of their

lives. I have spoken extensively with parents and educators in my district, people who are dedicated to the success of every student. Many of them tell me that No Child Left Behind has become a tool to label schools, not always accurately, instead of a tool to help them help their students.

I know that those concerns are not limited to my district. That is why I believe this reauthorization is so very critical. My priorities for reauthorization are a law that is fair, flexible and fully funded, and the result of a process that includes all perspectives, both on current law and on how best to educate our children, ideas and thoughts that will give the law the credibility it needs from all participants in our children's education in order to succeed.

Mr. Chairman, I believe that today can mark the beginning of this process. I also wanted to thank you for making arts education one of today's topics. A recent report suggests that in many schools, No Child Left Behind has resulted in more time for math and reading and less for arts and history, and that these trends may be more pronounced in high-minority schools. I have heard this from my district as well.

Representative Castle and I recently encouraged the Department of Education to conduct a survey on the extent of arts education in our public schools. This is not about minimizing the importance of math and reading, which we all know to be essential, but about ensuring that every child has access to a well-rounded education and educating the whole child.

So I look forward to hearing our witnesses. I want to hear what your experiences are. I am particularly interested in integration of arts education and other subjects throughout the curriculum.

Thank you, Mr. Chairman.

Chairman McKEON. We have a distinguished panel of witnesses here today. I would like to begin by welcoming them and introducing them.

I would like to ask Mr. Castle if he would introduce Mr. Lydic.

Mr. CASTLE. Thank you, Mr. Chairman.

Mr. Lydic is a physical education teacher in grades 2 through 4 at North Laurel Elementary School in Laurel, Delaware. He has recently been chosen as Delaware's teacher of the year for 2006. As a teacher, Mr. Lydic has excelled in integrating academic subjects into his physical education curriculum.

Also joining Mr. Lydic are some of his students: Alissa Gibbons, Gaby Colver, Shanda Mann, Alexa Thuddy, Natalie Savan, and J.T. Tindall. If I omitted anybody, I hope you will introduce them too, Mr. Lydic.

His wife Leslie is also here. I saw the two of them teaching together, as a matter of fact, when I was down visiting the school. She is also obviously a phys-ed teacher in the same district. And Cristy Greaves, the principal, is also here. We welcome them and perhaps some parents who are here as well.

So we welcome Mr. Lydic here. I yield back for the other introductions.

Chairman McKEON. Mr. Miller, would you please introduce Dr. Garrison?

Mr. MILLER. Thank you, Mr. Chairman.

Dr. Mickey Garrison and I met over a cup of coffee at a math summit that was called by the filmmaker George Lucas. Many know of George Lucas because of Star Wars and American Graffiti and so many great films, but he has been passionate about education, and the George Lucas Education Foundation put together a math summit for teachers and professors of math and researchers from all over the country.

Dr. Garrison and her partner there, Tammy, were picked out, and they had a video that they showed about how they incorporate math, and some of that will be in her testimony. We won't be able to see the whole video, but she rocked that hall. So it was her video against George Lucas's, and she was winning in that hall with those math teachers about the excitement in that school.

I want to thank you very much for inviting them to participate.

Chairman McKEON. We get to visit lots of schools, and we get to see some exciting things happening. You hear all the negatives, but one of the good things about being on this committee is we get to visit schools and see a lot of exciting things happening.

I am glad that we have a couple of principals here today. Rightly so, there is a lot of talk about teachers and their importance. We don't talk enough about parents and their importance. We don't talk enough about principals and their importance.

I can walk on a campus, and I can tell if that is a good school. It is a feeling you feel right away. And that is set by the principal, and then it funnels down through every teacher and through the students.

We have another principal here this morning, Mr. Rick Holt. He spent the last 8 years as principal of the Lewiston K-8 School in rural Lewiston, Michigan, where he has seen his school of 350 students go from being labeled as chronically under-performing to a school of excellence, receiving an "A" from the Michigan Department of Education. Prior to his work at Lewiston, Mr. Holt worked in the Atlanta community in Michigan, where he spent 5 years as principal of approximately 300 students in a pre-K-6 school.

Next, we have Mrs. Betsy Ablott, a teacher at Arlington Science Focus School in Arlington, Virginia. At the Science Focus School, Ms. Ablott has been an instructional leader, having served as the lead science teacher and also a mentor teacher for her fellow faculty. Ms. Ablott has been a classroom teacher since 1998 and is currently working to obtain her Ph.D. at George Mason University School of Education.

Mr. Ray Zeigler is a fine arts specialist for the Maryland State Department of Education, where one of his principal responsibilities is directing the Maryland Artist-Teacher Institute, a professional development program for integrating the arts at the elementary and middle school levels. For 3 years, Mr. Zeigler functioned as a coordinator for the Maryland Music Curriculum Task Force and later chaired the Maryland Fine Arts Task Force, which developed the essential learner outcomes in the fine arts.

We are really happy to have you here and really look forward to the things you are going to talk about. This is going to be a little different than many hearings where we have the panelists tell us things. They are also going to show us some things and are going

to involve some of their students here, so it should be a very exciting hearing.

On a point of personal privilege, I have in the audience my cousin of many years—I won't say how old she is, but she is younger than I am—and her husband, Becky Dorsh, her husband Peter, and their son. So I am happy to have them here.

Now, we will hear from Mr. Lydic.

**STATEMENT OF GARRETT W. LYDIC, 2006 STATE TEACHER OF THE YEAR, NORTH LAUREL ELEMENTARY SCHOOL**

Mr. LYDIC. Chairman McKeon, Ranking Member Miller and other distinguished members of the Committee on Education and the Workforce, good morning and thank you for the opportunity to testify before you today about something so near and dear to my heart.

My name is Garrett Lydic, and I teach approximately 550 2nd-, 3rd- and 4th-grade students, with physical education as my discipline, at North Laurel Elementary School in Laurel, Delaware. This past year, I was awarded Delaware's teacher of the year for 2006. Two days during our school's 6-day cycle, I have the privilege of working alongside of my wife Leslie, also a physical educator within the Laurel School District.

The main goal of our program is to hook our students on physical activity by exposing them to a variety of movement opportunities that are fun, stimulating and that allow each of them to experience their own personal level of success. We have discovered through our experience over the last 10 years that physical education is an ideal vehicle for reinforcing the academic standards that students are learning within their classrooms.

During many of our physical activities, students apply the concept they are learning in areas such as math, science, writing and reading to achieve a goal. We have discovered that our students get exciting about learning academic content standards in this manner because they are performing physical activities, rather than the typical classroom activities where students are seated at their desks.

The success of our program is directly related to the support that we have received from our community, as well as from our administration. For example, 5 years ago I wrote and received a grant from MBNA, a company recently acquired by Bank of America, to purchase a 60-foot Discovery Climbing Wall system that enables our students to enable all the physical, emotional and social benefits associated with climbing, while also applying the academic content standards.

Without the support of MBNA, it is highly unlikely that our district could have purchased this \$13,000 climbing wall system. The Discovery Wall surface is similar to a blackboard, allowing participants to write with chalk and attach magnets. As part of the grant, we obtained additional funding to purchase a variety of educational magnets, including numbers, math problems, letters, words, money and symbols. In our lessons, climbers traverse or climb sideways along the wall and always have a helper who acts as their spotter.

Just a few of the many activities that we do on the Discovery Wall to integrate other curriculum areas include climbing while

searching for matches to math problems; climbing using only odd- and even-numbered handholds and footholds; climbing while searching for all the letters to a spelling word; and climbing using only verb, noun or adverb hand-and footholds.

Another MBNA grant that we received was for Speed Stacks equipment. Sport Stacking is an exciting individual and team sport where participants stack and unstack 12 specifically designed plastic cups in predetermined sequences. Sport Stacking is a cross-lateral activity, meaning that students cross the midline of their body, thereby making use of both sides of their brain. Research suggests that cross-lateral activities assist with brain function, thus improving learning capabilities for children.

Our students really enjoy performing stacking activities, as you will see today, especially those that incorporate math skills. By using a stack mat with a timer, students can attain a time for any of the stacking patterns that they are practicing. These times are then used to solve math problems, including ordering, addition, obtaining a median, or grouping of numbers.

I would like to show a short video at this time. And while the video clip wasn't really intended for this purpose, I believe it will help better illustrate these climbing and stacking activities.

[Videotape played.]

Mr. LYDIC. It is important that children be given opportunities to make conceptual connections to real-world experiences, so they see their studies as something meaningful and relevant. While I am convinced that the physical environment is ideal for providing such opportunities, it is also important to note that research clearly shows achievement increases for children whose teachers introduce kinesthetic or movement experiences within the classrooms.

Thank you again, Chairman McKeon, Ranking Member Miller and other distinguished members of the Committee on Education and the Workforce, for your leadership and commitment to providing quality public education in our great country. Thank you also for providing me with this opportunity to share some of my experiences with you.

I brought a group of students with me today who are prepared and eager to share their experiences within you upon request.

I have also brought Speed Stacks cups for the members of your committee, courtesy of Bob Fox, owner of Speed Stacks, Incorporated.

Thank you again, and I look forward to answering any questions you have about our program.

[The prepared statement of Mr. Lydic follows:]

**Prepared Statement of Garrett W. Lydic, 2006 State Teacher of the Year,  
North Laurel Elementary School, Delaware**

Chairman McKeon and Ranking Member Miller and other distinguished members of the Committee on Education and the Workforce: Good morning and thank you for the opportunity to testify before you today about something near and dear to my heart. I am pleased to be able to provide information today about integrating core content subject areas including math, science, and reading into physical education and also integrating movement into the classroom environment to assist student learning.

My name is Garrett Lydic and I teach approximately 550 second, third, and fourth grade students with physical education as my discipline at North Laurel Elementary School, in Laurel, Delaware. This past year I was awarded Delaware's Teacher

of the Year for 2006. I have been teaching physical education in this capacity for 5 years and my wife, Leslie, also a physical educator within the Laurel School District, has been teaching since the mid 90s. We actually teach together at North Laurel Elementary School two days during our six-day cycle.

The main goal of our program is to hook our students on physical activity by exposing them to a variety of movement opportunities that are fun, stimulating, and that allow each of them to experience their own personal level of success. We are committed to integrating other content areas and learning into our lessons. We feel that concepts and skills that children are currently studying in math, reading, science, and social studies can easily and effectively be incorporated into their physical education lessons. Our approach to teaching correlates with John Dewey's belief that many children are able to demonstrate greater cognitive improvements when lessons emphasize activities and processes where children interact with their environment (Ornstein, 1997). Additionally, Swiss psychologist Jean Piaget learned that when interacting with and manipulating their physical environments, children are better able to develop an understanding of abstract ideas such as cause-effect relationships and physical characteristics such as weight and volume (Ormrod, 2000).

We have discovered through our experience over the last 10 years that physical education is an ideal vehicle for reinforcing the academic standards that students are learning within their classrooms. During many of our physical activities, students apply the concepts they are learning in areas such as math, science, writing, reading, and social studies to achieve a goal. We have observed that our students get excited about learning math, spelling, and other academic content standards in this manner because they are performing physical activities rather than the typical classroom activities where students are seated at their desks. This also enables children to see how concepts learned in one venue are transferred to other venues and to life's challenges.

The success of our program is directly related to the support that we have received from the community and from our administration. For example, five years ago I wrote and received a grant from MBNA to purchase a 60-foot discovery climbing wall system that enables our students to experience all the physical, emotional, and social benefits associated with climbing while also applying concepts learned in math, writing, spelling, and science. Without the support of MBNA, recently acquired by Bank of America, it is highly unlikely that our district would have been able to purchase this \$13,000 climbing wall system. Projects such as these are extremely difficult to fund so we feel fortunate that MBNA recognized the potential of our Discovery Wall project. The Discovery Wall surface is similar to a blackboard, allowing participants to write with chalk and attach magnets. As part of the grant, we obtained additional funding to purchase a variety of educational magnets including numbers, math problems, letters, words, money, and symbols. In our lessons, climbers traverse (climb sideways) along the wall and always have a partner who acts as their spotter. Spotters are trained to offer motivational, navigational, and/or physical support only when absolutely necessary or when the partner who is climbing requests such help. Just a few of the many activities we can do on the Discovery Wall to integrate other curriculum areas include climbing while searching for matches to math problems, climbing using only odd or even numbered hand and/or footholds, climbing while searching for all the letters to spelling words, and climbing using only verb, noun, or adverb hand and/or footholds. Again, these are just a few of the many activities that are possible with the discovery wall system.

Another MBNA grant that we received was for Speed Stacks equipment. When I was introduced to Sport Stacking two years ago I knew instantly that this was an activity that my students would just love. Sport stacking is an exciting individual and team sport where participants stack and unstack 12 specially designed plastic cups in pre-determined sequences.

Individual stackers race against the clock for fastest or best times. Stackers also compete on a relay team racing against another team in head-to-head competition. With practice, a person can stack at lightning speed that has to be seen to be believed. Sport Stacking can be individualized, allowing each student to work to success at his/her own level. It is also geared to include students of all ability levels, allowing every student to succeed, while still challenging the more fit and athletic students. Students learn not only how to be physically active, but why; and how to take personal responsibility for this critical aspect of their lives.

Sport stacking is also a "cross lateral" activity meaning that students cross the midline of their body, thereby making use of both sides of their brain. Research suggests that cross-lateral activities assist with brain function, thus improving learning capabilities for children. Increasing bilateral proficiency (equal performance on both sides of the body) develops a greater percentage of the right side of the brain which houses awareness, focus, creativity and rhythm.



When one crosses the midline, the brain begins to make new connections and the right and left hemispheres begin to work together. This communication process organizes the brain for better concentration and problem solving. Crossing the midline integrates brain hemispheres to enable the brain to organize itself. When students perform cross lateral activities, blood flow is increased in all parts of the brain, making it more alert and energized for stronger, more cohesive learning. Movements that cross the midline unify the cognitive and motor regions of the brain: the cerebellum, basal ganglia, and corpus callosum while stimulating the production of neurotrophins that increase the number of synaptic connections (Dennison, Hannaford).

In addition to the countless activities designed to improve their stacking skills, our students perform stacking activities that incorporate math skills. By using a Stack Mat with a timer, stackers can obtain a time for any of the stacking patterns they are practicing. These times are then used to solve math problems including ordering, addition, obtaining a median and grouping of numbers.

I'd like to show a 1-minute video at this time that is likely to give you a better illustration of students performing these types of climbing and stacking activities. Please note the smiles on the students' faces as well as their level of engagement.

It is important that children be given opportunities to make conceptual connections to real-world experiences so that they see their studies as something meaningful and relevant. While the physical environment has proven to me to be ideal for providing such opportunities for students, research clearly shows achievement increases for children in classrooms where teachers introduce kinesthetic or movement experiences within their lessons.

Einstein so succinctly pointed out, "learning is experience, and everything else is just information." There is ample data that clearly supports the importance of movement at every age, from the toddler to the adult. We know that apathy in the classroom dissipates as sensory activation and hands-on learning are increased. As educators incorporate more physical activity and less lecture, all of our students, not just the kinesthetic learners or those lacking social skills, will experience increased intrinsic motivation, improved attitudes, more bonding, and yes, even more brain cells. In fact, when it comes down to it, most of our problems can be solved through purposeful integration of active learning (Jensen, E).

The scope of movement activities these researchers are referring to includes recess, dance, play, theater, games, energizers, and physical education. They add that movement experiences such as these elicit a different kind of learning referred to as implicit or one that is centered in the body. Explicit learning, which is much more common in our schools, includes lecture, textbooks, research, video, and discussion (Jensen, E). Let me give you an example that may better illustrate the potential of implicit learning through movement. Let's say that while in grade school, you learned how to ride a bicycle and that the capital of Uzbekistan was Tashkent. In five years, would you still be able to ride a bicycle without any further practice or would you remember the capital of Uzbekistan without any further application of that information? The likely answer to riding the bicycle is yes, which represents implicit learning, and no to remembering the capital of Uzbekistan, which represents explicit learning.

Allowing students to move away from their desks or computers and interact with classmates in some form of activity or exercise leads to incidental learning which is just as important to total overall growth and development, as is content learning. As implicit learning activities are incorporated into the classroom, research clearly shows achievement increases for all levels of students.

It is important that all educators become advocates for movement and activity, with teachers and administrators ensuring that more movement and kinesthetic teaching strategies are incorporated into their lessons and school-wide activities, thereby reaching a greater percentage of students. Research suggests that eighty-five percent of school-aged children are natural kinesthetic learners. Movement activities tend to be cross-cultural, resulting in robust effects across the entire range of human cultures. At-risk students thrive when provided with movement or hands-on activities enabling them to experience learning and apply the concepts being learned while answering real-life questions. While gifted children discover a new way to learn, the slower learners quickly become actively engaged and successful, and non-English speaking students are able to understand the curriculum through a more nonverbal approach. Brain-based research suggests the best learning occurs when students learn new content for 10-15 minutes and break for at least 2 minutes—a perfect time for a movement activity (Bevel, K). Bringing movement into the classroom not only increases learning, but also makes the classroom a healthier, happier place to learn and teach.

While certainly not commonplace, there are many physical educators who regularly integrate content into their physical education lessons. For example, Jerry Thornton, the Missouri State Teacher of the Year has his students perform a “quarter, nickel, or dime’s worth of certain activities (for example a dime’s worth of push-ups would be 10 push-ups). He also holds money relay races to help his young students better understand the concepts of money.

Thank you again, Chairman McKeon and Ranking Member Miller and other distinguished members of the Committee on Education and the Workforce, for your leadership and commitment to providing quality public education in our great country. Thank you also for providing me with this opportunity to share some of my experiences with you. I have brought a group of students with me today who are prepared and eager to share their sport stacking talents with you upon request. I have also brought a set of Speed Stacks cups for each of the 20 members of your subcommittee courtesy of Bob Fox, owner of Speed Stacks Inc. Thank you again and I look forward to answering any questions you might have about our program.

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Chairman McKEON. I think we would all like to see the students do a little demonstration.

Mr. LYDIC. Is that right? I think they would be glad to come on out. Thank you. I thought it was a great opportunity for them and for you all to see it.

Chairman McKEON. Just don’t ask any of us to do it.

Mr. LYDIC. Excellent idea.

[Laughter.]

By the way, this was Mr. Castle’s idea to bring the students.

[Laughter.]

Whenever you are ready, ladies.

They are doing what is called a cycle stack. It combines three separate stacking patterns. They just did a 3-6-3. Now, they are going to work on a 6-6, and will follow up with a 1-10-1, and then finish up with a 3-6-3 down-stack.

[Applause.]

If you would entertain four more students, that would be wonderful.

[Laughter.]

Mr. CASTLE. Could Chairman McKeon come down there and do it with the kids?

[Laughter.]

Do you think that would be possible? And maybe Mr. Miller?

Mr. LYDIC. This is Gaby and Shanda. That is called a fumble, when they fall off the table. We call those fumbles. They keep going, and they don’t stop.

[Applause.]

This is J.T. and Alissa Gibbons. You saw Alissa on the video at the very end.

[Applause.]

Very nice. Very nice. Wonderful.

[Applause.]

Thank you very much.

Chairman McKEON. Wow.

[Laughter.]

Can you do that, too?

Mr. LYDIC. Not like that, I can’t.

[Laughter.]

Chairman McKEON. That was great.

Dr. Garrison?

**STATEMENT OF MICKEY GARRISON, PRINCIPAL, FULLERTON  
IV ELEMENTARY**

Dr. GARRISON. Well, thank you for the honor for us to share what we do at our school.

And I just want to comment that we also do cup-stacking, and so now we have a link to the East Coast.

We are very proud to share our integrated approach to what we do with mathematics as a focus. However, all of our curriculum is integrated.

We have a PowerPoint that I think we are going to just let go of. You hopefully have copies. And thank you so much for the invitation. I think what we will do instead is have you have an opportunity to see what we do at our school.

Coming from Oregon, we weren't able to bring our students with us, so we captured some of what we do on film, and this was done as a result of a math achievement award that we received through the Scholastic Intel Program. And the filming is done through the George Lucas Education Foundation.

And so, if we could look at Fullerton IV and what we do in math.  
[Begin videotape.]

Teacher in Classroom. Today is what date?

Students in Classroom. 10/4/05.

Narrator. It begins in the first 5 minutes of first period.

Teacher in Classroom. What kind of a number do I have? Is it a composite number, a fine number or a square number?

Students in Classroom. Square.

Narrator. It continues throughout the day.

History class——

Teacher in Classroom. We are going to measure the length of Titanica's side.

Narrator [continuing]. Art class——

Teacher in Classroom. Whatever you make has to be cut out——

Students in Classroom. Symmetrically.

Narrator [continuing]. Computer lab——

Teacher in Classroom. And the next one?

Students in Classroom. Forty-four.

Narrator [continuing]. And it ends in last-period music class.

Teacher in Classroom. We are going to take the math idea of below a zero and turn it into music.

Narrator. It is part of most everything that happens at Fullerton IV. A K-5 school in Roseburg, Oregon, it is the magic of math.

Teacher in Classroom. You are absolutely correct.

Dr. GARRISON. To me, math is not a subject. It really allows kids to learn how to reason and problem-solve and learn how to effectively communicate.

Teacher in Classroom. Now, music is sound. So what would be the opposite of sound?

Student in Classroom. Silence?

Teacher in Classroom. Silence.

Dr. GARRISON. And if they can think conceptually, it opens up not just math, it opens up thinking. It makes connections for them in the real world.

Teacher in Classroom. Now, remember to put some silence in your patterns.

Dr. GARRISON. It allows them to explore music and art. And so, math is really the foundation.

Teacher in Classroom. Oh, I see some really wonderful positive negatives, just like those math numbers. Great.

Narrator. With all the engaging ways to learn here, it is not surprising most Fullerton students say——

Student. And my favorite subject is math.

Student. Doing math.

Student. Probably math.

Student. Math.

Student. I like math a lot.

Student. It is probably soccer.

Student. Probably reading and math.

Student. I just like to add and subtract.

Interviewer. What is your second-favorite subject?

Student. Playing with friends.

Student. I like division the most.

Student. Math.

Interviewer. What do you like to do in a classroom?

Student. Probably math.

Student. My favorite subject is actually math.

Interviewer. How come?

Student. I just like it.

Narrator. Fullerton's math curriculum is based on a continuous review of best practices and delivered by highly trained teachers, beginning in kindergarten.

Teacher in Classroom. Tell me about green, blue, green, blue.

Student in Classroom. It is a pattern.

Teacher in Classroom. It is a pattern.

Teacher. The kids will look for me oftentimes for the answer. And I can give the correct answer every time, but what I want them to do is to talk their way through the problem.

Teacher in Classroom. Whisper to your neighbor what you notice about them.

Teacher. We use a word at our school called "discourse." And it is the ability for kids to communicate back and forth between each other, so that they can start to understand that problem or communicate it to me.

Teacher in Classroom. Do you think this is still a pattern?

Student in Classroom. No. If you just took this part off and put the green in the middle and then the blue on the top, it would be a pattern.

Teacher in Classroom. This would be a pattern.

Narrator. Since the new math curriculum was institute in 2000, math test scores have soared. Now 98 percent of 3rd-grade students score at or above grade level. This despite the fact that the number of students on free and reduced lunch has also climbed to 60 percent.

Dr. GARRISON. When you look at children that have personal life struggles, too often adults make excuses and minimize their ability to learn. And one of the things——

[End videotape.]

Dr. GARRISON. It played a little longer than we intended, and I guess my time is up. OK, I will slip in just another word.

Although you were looking at math, what I want to share with you is the fact that it is not just math where achievement is up. Our reading scores are up and I know the emphasis on reading and math is a concern. What I am going to say is that by integrating curriculum, it makes much more sense for student learning. Consequently, we are reaching all of our kids and they aren't being shorted in any way.

What is hurting us is the lack of adequate and stable funding. So if you were to address anything, that would be one thing that I would hope you would look at because I can say that we work very hard at what we do. The model that Mr. Miller caught on to when we met at the ranch in our district is whatever it takes.

I can tell you that I do that personally every day and my teachers live it every day. The way we make our school work is by having a strong community engagement component, and we have a connection with businesses. We also do a lot of grant writing in order to get our needs met because with our current budget, we can't do that. It doesn't allow for it.

We also have high expectations and part of that is a result of NCLB. In addition, I am going to say it is the standards that my staff set, as well as I have. I consulted nationally and I can tell you that I have been in almost every state in the union, prior to going back home to Roseburg and looking at being a building principal. I learned a lot within those travels.

One of the things that I learned is that if we give teachers the tools that they actually need and give them the support by allowing them to do things like peer-to-peer observation and principals playing a role in going into classrooms to provide coverage, that you can look at effective programs with best practice, but it needs to be supported with actual research within the classroom. You can tie-in curriculum so that you have links so that you are empowering learners tremendously, and they are taking charge of their own learning.

I want to just say that because of the population of students that we have, our families our very poor and their needs are great. However, their involvement in our school is huge. Back-to-school night is something that we celebrate with 98 percent return of having our parents be there for us and for their children.

We also feature some fun events like all schools do, but we have Fiesta Salsa Math Night where you get to actually learn to dance and learn a lot about math. We have Computer Tech Night. We have a read-in where we wear our pajamas, which is much more comfortable.

[Laughter.]

One of the keys to all of what we do is being creative with scheduling. I can tell you that we spend a lot of time in thinking outside the box and looking at how we utilize resources, educational assistance as well as teacher time. Tammy Rasmussen, a teacher who is here with me today, that you also saw in the video, is an amazing teacher who has rescheduled her life to meet children's needs. Her workday is supposedly not supposed to start with student contact until 8:45 a.m.

However, she starts a reading group at 8 o'clock in the morning so that we can integrate what is happening for kids, and that they

can get the boosters that they need in order to have the foundational skills so that they can enjoy and celebrate the arts and enjoy music, and understand it even better.

One of the things that I am going to again ask you to please look at is stable funding. It is very unpredictable in our state, and I can tell you our district does an amazing job of trying to distribute that money. But without adequate and stable funding, I can tell you that even though I write a lot of grants in every waking moment, I still can't get the needs met, although we are doing better than most.

One of the key considerations that you alluded to in the intro was leadership. I am going to say that it is critical that administrators are the educational leaders within their schools, and that they are decisionmakers and sometimes make hard decisions.

If you have ever read a great book called "First, Break All the Rules," I think it was written about me. So if you look at success and you look at how to actually meet students' needs and support staff at the same time, you have to break the rules. That means that you have to step outside the box.

We do a lot of extensive professional learning within our school and within our district. Within our school, we utilize staff meeting time for staff development. I empower my teachers to actually use that development time in teaching each other.

If you are not familiar with peer-to-peer coaching, I would encourage you to look at it because it is truly the best way for teachers to learn about their profession from each other, and more importantly, for them to support each other and to have high-fidelity of implementation of programs within classrooms, which is beneficial to all learners, as well as to teachers professionally.

In closing, we have received a lot of awards and a lot of achievements in the last 3 years since I have been at Fullerton, not just in math, but across the board. I ask that you look at our achievements and celebrate those with us, but also I ask that you look at what you can do to ensure that the struggles as far as funding can be minimized and maybe even reduced.

Thank you.

[The prepared statement of Dr. Garrison follows:]

**Prepared Statement of Mickey Garrison, Principal of Fullerton IV  
Elementary School, Oregon**

*School Overview*

Fullerton IV Elementary School takes pride in its reputation as innovative neighborhood school that has surmounted formidable economic and societal challenges to provide an optimal learning environment for its students. We do that by actively engaging our parents, students and teachers in programs that reach far outside the traditional curriculum.

Our school is located in rural Douglas County, a county with one of the highest unemployment rates in the state. Students' families are typically low-income with limited employment opportunities in the immediate area. More than half (65%) of our students participate in the free and reduced lunch program. Fullerton IV also has a disproportionate number of special-needs children; current district figures put the number at 13%. Our school has the highest concentration of mentally challenged children in the district. In addition, we house the elementary behavior program for students with emotional and social challenges within our district.

Oregon's distressed school funding system means that very few financial resources are available for supplemental programs and initiatives to help our students. We at Fullerton IV have chosen to find our own solutions, and we're doing that by building on our reputation as an innovative neighborhood school.

### *Community Engagement*

At the heart of our success is an outstanding record of school involvement by parents. When budget cuts eliminated many classroom aide positions, parents stepped in to fill the gap. When our business office did not have the personnel to perform many functions, volunteers signed up to answer phones, run the copy machine and man the front desk. The numbers tell the story—our Back-to-School Night for the past two years drew representatives from 98% of our students' families, and we expect the same level of participation at the Technology Night and Math Fiesta Night we schedule each year.

Our students are active in the community and we feel that has a direct effect on their academic success. Students work on a wide range of projects that directly benefit the community, such as a landscaping project undertaken by our Student Council at the local baseball field. Our school also has structured community service activities that benefit fellow students. Peer tutors in our immediate grades, for example, tutor primary-level students in reading and math. Student "valets" help others get into cars safely at our after-school pick-up site.

### *Common Threads*

Innovative programs are another key to our success. These range from the complex, such as our before-school program aimed at ensuring the success of more challenged students, to the simple, such as the "Music Minute," where students and teachers together listen to a daily dose of classical music that is integrated in art and math.

We integrate our curriculum by effectively linking subjects like math, science, music, art reading, writing, and social studies to encourage learning within a known context. The challenge of teaching an integrated curriculum is structuring properly so as to teach the desired skill set. Shoemaker defines an integrated curriculum as education that is organized in such a way that it cuts across subject-matter lines, bringing together various aspects of curriculum into meaningful association to focus upon broad areas of study. It views learning and teaching in a holistic way and reflects the real world, which is interactive (1989, p.5).

### *Effective Programs and Our Successes*

The success our programs have enjoyed has been recognized outside our school. Fullerton IV has been a demonstration site for schools in our district, state and out-of-state districts for our math program. Our math achievement won us the Schools of Distinction award, sponsored by Intel & Scholastic, in 2005. Fullerton IV also is Southern Oregon's demonstration site for an English program used in our classrooms, "Step-up-to-Writing."

These are just a taste of the programs and activities that have helped Fullerton IV become known throughout the district and state as a school that solves problems, and in doing so, creates a rich learning environment for its students.

Improving the math performance of our students became a priority for Fullerton IV two years ago, after students' math scores consistently showed no improvement in state reports. In an effort to improve performance, we implemented several initiatives and programs that have never been done in our district before. Based on internal observations, parent involvement and teacher's comments, we felt we were successful.

That observation was initially validated by the state of Oregon's 2003-2004 School Report Card, which showed a marked improvement in all categories of math and reading test scores. Overall, Fullerton IV moved from a "Satisfactory" rating to a "Strong" rating. In the two math categories, knowledge and Skills and Problem Solving, our school outperformed comparison schools, district schools and state schools. Our achievement for 2004-2005 was an "Exceptional" rating and the same is true in 2005-2006. More specifically, our recent testing, which was just completed for 2006, reflects the following results: reading performance for 3rd graders was 96%, 4th 100%, and 5th grade scored a percentage of 94%. In mathematics, 3rd graders achieved 95%, 4th grade 98% and 5th grade achieved 95%. In science our fifth graders overall performance was at 94%.

At the heart of our effort is the before-school program we initiated with federal grant support. The program offers students an extra half-hour of academic support in the morning, before regularly scheduled school begins. The math portion consists of the computer-based program PLATO Math Expeditions, an interactive and very popular program where learners become members of expeditions in which math concepts are connected to science, social studies, geography and history. This same approach is used in the reading portion of our program that consists primarily of Read Naturally and Earobics. Read Naturally focuses on fluency while Earobics emphasizes phonemic awareness.

The school also has begun emphasizing technology programs that help with math learning, such as Math Facts in a Flash. This program allows students to assure mastery of math facts and computational fluency by allowing them to work at their own levels.

Each grade levels has access to a Smart Board and Einstruction pads both of which encourage high student engagement and formative teacher assessment of student performance. The immediate performance feedback allows teachers to modify and adjusts instruction in split seconds.

Another integral part of our success lies with family participation. We believe that involving parents is the key to our students' success. To that end, we have increased the opportunities parents have to become involved in their child's math education. At this year's Back-to-School Night, for example, we offered 15-minute mini-sessions that introduced parents to our integrated curriculum. The response was so enthusiastic—we had a 98% participation rate—that we are planning a series of "Tech Nights" to begin in early 2005 and 2006, where families can explore the computer-based programs used in our efforts.

And none of this could be accomplished without the enthusiastic participation of our teachers. We make a special effort to support our teachers as they try to improve their students' performance in the face of dwindling resources. Our staff meetings have become staff development opportunities, where teachers share observations and practices. These are put into practice in the classroom. The principal frequently covers classes so teachers can observe and coach each other.

All of these efforts combined have turned the math program and overall student learning around at Fullerton IV, and resulted in a productive environment that, with the support of family, nurtures our students' learning ability.

#### *Awards and Achievements*

We have much to be proud of beyond our "Exceptional" state achievement ratings. In 2005 we received the Mathematics Achievement Award through the Schools of Distinction (Intel & Scholastic Program) and also an Honorary Mention for our reading achievement through the Oregon Reading Association.

2004 the National Citizenship Education Teacher Award—Fifth-grade teacher Linda Dwight won district-level recognition from the VFW for excellence in instruction. Her creative curriculum focuses on activities that explore our country's history and traditions, as well as on civic responsibility.

2003 Distinguished Public Service Award—This annual award, granted by the City of Roseburg, recognizes the many community service activities of our students throughout the year. Student activities that contributed to this award include: the renovation of a room by our student council of a room in a community homeless shelter, landscaping of two city park areas, and yard care for the elderly in our school community.

2002 Distinguished Public Service Award—This annual award, granted by the City of Roseburg, recognizes the many community service activities of our students throughout the year. Fullerton students received this award for adopting and maintaining the cleanliness of the streets immediately around our school and for landscaping a city park area.

First place, Battle of the Book, 2002—Schools from throughout the Roseburg School District participates in this highly competitive contest. Battle of the Books requires students to spend many outside hours reading from a prescribed list of books. The competition culminates in a district-wide question-and-answer contest that determines the winner.

#### KEY REFERENCES

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Chairman McKEON. Thank you.  
 Mr. Holt?

#### **STATEMENT OF FREDERICK G. HOLT, PRINCIPAL, LEWISTON K-8 SCHOOL**

Mr. HOLT. Good morning, Mr. Chairman, members of the committee. I want to thank you for the opportunity to be here this



morning to speak with you. It is a tremendous honor to be here this morning, especially since I didn't realize I was coming until Monday, so it has been quite a whirlwind of activity and excitement.

And, again, it is an honor. I feel I am representing my school, my community and my entire state here this morning. And hopefully I can communicate with you some of what we have been through.

I am the principal of a small school in rural northern lower Michigan that just a few years ago was designated a failing school. And currently today, we are designated an "A" school. It has been quite a journey to get from there to where we are now, and hopefully I can bring some of that to you here this morning.

The Lewiston Elementary-Middle School is the only school located in the town of Lewiston. We are about 200 miles north of Detroit. Very limited employment opportunities in our area, and currently the unemployment rate is about 11.5 percent. Our school houses about 350 students in grades kindergarten through 8. Our district is a consolidated district. We have joined with a neighboring town, Johannesburg, and we serve a total area of about 310 square miles, for a total of 875 kids in grades K-12.

Now, going back a little bit to the mid-1990's, our school was designated by the state of Michigan as a chronically low-and under-performing school. And when that long and almost poetic-sounding label was attached to us, it took a little bit of thought and thinking before we realized what it really meant, and it wasn't good.

It really, really, in a positive way, brought out the best in my staff, because it wasn't long before we decided enough is enough. We are not chronically low-or under-performing. The people in our building, the students, the people in our community are too good for that. So that was kind of a beginning for us, a catalyst to really, really bring about some change.

As I said, right now in 2006, we have a rating of "A" for our elementary grades and a rating of "A" also for our middle school grades. And there is a lot of pride in our building and in our community over that.

Our journey from chronically low-and under-performing really began with a real, real purposeful and systematic look at student performance data; a real, real deep analysis as to how our students were doing in the different subject areas, all the subject areas. As we did this, it became very obvious to us that reading was an area that we absolutely had to improve upon if our students were going to have a chance to do well in anything else.

The problem or the challenge at that point was how we would take our passion, our desire, our energy, our motivation and turn it into effective change in instructional practice. Well, progress got moving and it got moving along slowly. At the district level, we formed a district-wide school improvement committee. We formed a community-wide group which we called the stakeholders, which has a large number of community members, community leaders, about 70 people. That group still meets today.

Progress really began. Our state test scores were still low. We were still having problems, but by the year 2000, we received an award from the state of Michigan called the Golden Apple Award

for being among the most improved schools in the state on the state test scores. We still weren't anywhere near the best. We weren't anywhere near where we felt we needed to be, but we were among the most improved.

With that award also came a state investment of \$50,000 from the state of Michigan to put toward school improvement. That is when things really got rolling. Our staff, at this time we were absolutely committed to the systematic and regular review of student performance data. We got together as a team, as a unit and built the school improvement plan around professional development, around making ourselves better teachers, making ourselves better at what we do each and every day.

So we developed a school improvement plan around professional development, sent out RFPs to all the major universities, the intermediate school districts in the area, anybody that we knew that could possibly come in and work with us to make us better at what we do.

We heard back from some of those, and drew up contracts with the best of them and designed a program where professional development was brought into our building. We didn't send people out to conferences once a year to go and maybe listen to some good speakers and hear what they had to say, and then come back and eventually end up doing what they had always done in the classroom. We brought the professional development to us.

Through this whole process, again the test is always how well the students are doing. We are always going back to the data. Is it impacting student performance? Because if it is not, we are going to do something else. If it is, we are going to do it and we are going to do more of it.

Our work on quantifying, refining, and improving our teaching and learning has not been at the expense of other areas of the curriculum besides reading and math. I mentioned reading as a glaring area of need. We have been able to do other things in our district as well.

We offer our kids a fully rounded program including physical education, health, music, art, library and computer classes for the kids in kindergarten through 8th grade. I have to add also we just put a climbing wall in our building too, of which we are really proud. I may put my P.E. teacher in touch with you about things to do with it, so a little connection here.

Our students are offered a lot of opportunities to attend field trips in different areas. At our local community college, they go to theatrical productions. They take an annual trip down to Lansing every year to see the state capitol, and we take our 8th-graders up to Lake Superior State University in Sault Ste. Marie for a little taste of college life.

Our turnaround and our success in Lewiston have only been possible with the support, belief and financial investment of the Johannesburg-Lewiston area schools, the state of Michigan, and also the Federal Government as well. But here we are now, a few years into our program, and it is really time, as Dr. Garrison mentioned, for the peer-to-peer observations and some of the other things now. The impetus really falls on us and the building staff to continue this process.

What I didn't mention a few years ago was in addition to the \$50,000 investment from the state, we received a comprehensive school reform grant, which is a Federal grant, which brought in a lot of professional development into our building. It really, really took off. That is a 3-year grant, and we are in year 3. It is all done, so now it is up to us.

So what we are doing right now is setting up a program so that the professional development, the momentum, the energy, the improvement continues, but it has to continue within the building, within our staff, and the power that we have developed through our years of training.

I want to again conclude by thanking you, Mr. Chairman and members of the committee, for the opportunity to share my passion for education, and also for my school, with you this morning. I hope I was able to in some small way paint a picture of the journey that we have been through and the value of high-quality, data-driven onsite professional development that has been a huge, huge difference in our building.

Thank you.

[The prepared statement of Mr. Holt follows:]

**Prepared Statement of Frederick G. Holt, Principal, Lewiston Elementary/Middle School, Johannesburg-Lewiston Area Schools, Michigan**

Good morning Mr. Chairman and members of the Committee. Thank you for affording me the opportunity to speak with you this morning. It is indeed a tremendous honor to represent my school, my community and my state before you in this hearing. I hope to describe for you some of the things I have experienced as the principal of a small, rural school in northern Lower Michigan. I believe we have been successful at developing and delivering a program to our students that is focused on meeting standards without sacrificing the fine arts or co-curricular activities. Over the past several years, we have journeyed from being labeled a "failing school" to being designated as an "A" school. I hope I can effectively describe some of that journey for you this morning.

*School and Community Information*

The Lewiston Elementary-Middle School is the only school located in the small town of Lewiston, Michigan. Lewiston is located approximately 200 miles north of Detroit. Employment opportunities include some light manufacturing, logging, oil and gas exploration, and service industries catering to tourism. Currently, the unemployment rate in Montmorency County, where Lewiston is located, is 11.5%.

The Lewiston School houses approximately 350 students in grades k through 8. After the conclusion of the 8th grade, Lewiston students go to the neighboring town of Johannesburg, 16 miles away, for high school. The Johannesburg School is a k-12 building which houses Lewiston's sister school, the Johannesburg Elementary-Middle School, and the Johannesburg-Lewiston High School. The communities of Johannesburg and Lewiston consolidated in the mid-1960's to form the Johannesburg-Lewiston Area Schools. The Johannesburg-Lewiston Area Schools district covers approximately 310 square miles and provides for the education of approximately 875 students k-12.

*Background Information*

In the mid-1990's the Lewiston School was designated a "chronically low and under performing school" by the Michigan Department of Education. Student performance on the Michigan Educational Assessment Program (MEAP) was inconsistent at best, with some subject areas finding only single digits in the percentage of students meeting the state standards. In addition to the poor performance on the state assessments, student grade point averages were low and the number of referrals for student discipline incidents was extremely high.

*Lewiston School in 2006*

Currently, the Lewiston School has a Michigan Department of Education rating of "A" for its elementary grades and "A" for its middle school grades. Additionally, there is a renewed sense of pride in the community and within the building. Other

measures of success include receipt of the state's Golden Apple Award in the year 2000, and an invitation for a team of staff members to present at the state's Comprehensive School Reform conference this past winter. Adding to the feeling of pride and success in the Lewiston School is the number of students from neighboring communities attending school in Lewiston as "school of choice" students. None of these measures of success seemed possible in the mid 1990's.

#### *Our Journey*

The journey from "chronically low and under performing" to success began with the teaching staff. After reviewing student performance data in the core subject areas, particularly reading, it became obvious to everyone on the staff that the responsibility for the current state and the responsibility for change laid within us. This acceptance of responsibility by the staff was coupled with a passionate desire to improve and accept nothing less than excellence. The challenge at that point was to move the staff's passion, energy and motivation into real and effective change in instructional practice.

Progress began to build slowly at the district level in 1997 with the formation of a district wide school improvement committee comprised of school staff, parents and community leaders. The District School Improvement Committee was born of a "stakeholders" meeting where a large number of community leaders gathered, brainstormed and established goals for the district's schools. Approximately 70 community members participated in that first stakeholders meeting. The stakeholders continue to meet annually each winter to review the district's progress.

Although MEAP scores were inconsistent and low, by the year 2000 they were beginning to show signs of improvement. The improvement reached a point high enough for the school to be designated a "Golden Apple Award" winner in the year 2000. The award was for improvement on the MEAP tests and it came with an investment of \$50,000.00 from the State of Michigan. That investment was to be put toward school improvement, and so it was.

Through the regular and systematic review of student performance data, areas of need as well as areas of progress became apparent. Reading still stood out as a glaring area of need. The building school improvement team, comprised of approximately 50% of the teaching staff, developed a professional development plan centered on the entire teaching staff being trained, on-site, by the best professional development providers available. RFP's were sent to several major universities, intermediate school districts and other potential professional development providers. Several experts in the area of literacy and curriculum development responded and contracts were made with the best of them. Crucial to the professional development plan was the use of student performance data as our measure of success and the ultimate tool of accountability. The professional development providers were to be held accountable just as we were holding ourselves accountable.

Shortly after the professional development plan was put into effect, the Lewiston School received another boost in the form of the Comprehensive School Reform Grant. The CSR Grant, a federal grant administered by the Michigan Department of Education, increased the investment into the Lewiston School to over \$80,000 annually for three years to be put toward professional development. The grant allowed the professional development of the teaching staff to move into high gear through the formation of a partnership with Michigan Middle Start. Michigan Middle Start provided on site training for all teachers in literacy and mathematics, as well as the development of higher order thinking skills on the part of the students. The literacy training has included the use of reading comprehension strategies for all content areas including science, social studies and math. There has been a building wide effort to encourage the students to write in mathematics as well as in the language arts. The training with Middle Start has included a big push toward the development of a professional learning community, where the school staff takes the initiative and responsibility for their own learning. This aspect of our growth is of particular importance as we wind down the third and final year of our CSR experience. It is now our responsibility to continue the growth and development we have experienced the last several years. It is our responsibility to mentor and challenge new teachers who join our team. We are a building made up of people committed to success. There are no independent contractors; there are no "one room school houses" in our school. Our continued growth and development will be monitored, as always, through the lens of student performance.

Our attempts to purposefully quantify, refine and improve teaching and learning have not been at the expense of other, broader areas of the curriculum. Due to the support of our local Board of Education and superintendent Jim Hilgendorf, we have been able to offer our students a well rounded educational program which includes physical education, health, music, art, library and computer classes for all students

in kindergarten through eighth grade. Additionally, an advisory program has recently been added to our middle school. Modeled after a long-time successful advisory program in the Johannesburg Middle School, our advisory program brings students together in groups of varying ages and abilities. Advisory classes meet weekly for activities that are designed to create a community within the student body and to inject a little bit of fun in to the school lives of our middle school youngsters. The advisory program involves projects and activities that sometimes enlist the help of parents and community volunteers. Just last week we completed a program that gave the students the chance to participate with teachers and community volunteers in activities such as painting, jewelry making, cooking, dance, team sports, and guitar playing. We also are able to offer our students a variety of field trips despite the distance involved in most cases. Students are offered opportunities to attend theatrical productions at a not too far away community college, to visit the state capitol in Lansing, and to get a taste of college on an annual trip to Lake Superior State University for our eighth graders. I hope I don't sound too much like I'm trying to sell my school, but I'm very proud of my students, staff and community.

Our turnaround and success at the Lewiston School has only been possible with the support, belief and financial investment of the Johannesburg-Lewiston Area Schools Board of Education, the State of Michigan and federal government.

#### *What's Next*

As I mentioned earlier, it is now our challenge to continue our track towards academic excellence without the level of support we've had the last three years through the Comprehensive School Reform Grant and Middle Start. Our current focus is on the sustainability of the momentum we've generated. Our goal is to remain on a trajectory that will allow us to meet the challenges of rising student performance standards presented by "No Child Left Behind." Our plan is to use the expertise that we have developed within our building with the help of Middle Start and other professional development providers with whom we have worked. Our professional learning community of teachers will now be faced with the task of passing on the knowledge and skills they have gained to the new teachers who join us in the years to come. As has been the case since the beginning of our journey, we will hold ourselves accountable through the close examination of our student performance data, and we will accept nothing less than excellence out of ourselves.

#### *Conclusion*

I want to conclude by again thanking you Mr. Chairman and members of the Committee for the opportunity to share my passion for education and for my school with you this morning. I hope I was able to convey to you my firm belief in the value of high quality, data driven, on-site professional development. I also want to close by reinforcing the importance of our staff's buy-in and active participation in our school improvement efforts. As a principal I am extremely fortunate to work with a talented and motivated staff that has been given sufficient time, resources and support to achieve what a few years ago seemed impossible.

Again, thank you Mr. Chairman and members of the Committee.

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Chairman McKEON. Thank you.  
Ms. Ablott?

#### **STATEMENT OF ELIZABETH ABLOTT, TEACHER, ARLINGTON SCIENCE FOCUS SCHOOL**

Ms. ABLOTT. Mr. Chairman, members of the committee, it is an honor to appear before you today to share my experiences with you as a science resource teacher in Arlington Public Schools in Virginia. We are right across the river, and we would love to invite you to come over and visit us during the implementation of No Child Left Behind.

I have been in elementary education for 8 years, currently teaching at Arlington Science Focus School, which has a diverse student population with children from five different continents; 41.1 percent of our students are non-Caucasian and 27.8 percent receive free and reduced lunches. We are one of 14 schools where parents

apply to have their children attend our school in order to receive more science education.

While we are a public school and held accountable to all of No Child Left Behind guidelines, we do center our teaching and apply science learning throughout the school day and across all curricula. It seems that under the requirements of NCLB, many schools have focused on reading and math instruction because that is where the testing is required by NCLB.

My experience, however, has not been so dramatically skewed and perhaps that is because I work at a science focus school. We have embraced the concept of children as scientists and engineers from our opening in 1994. Virginia, especially Northern Virginia, has always valued science instruction and in fact the standards of learning in state assessments in science have been in place for years.

I am fortunate to work in a school district that believes in a strong framework, while allowing the individual teachers and schools flexibility in curricula selection and instruction, as long as it meets the state standards. A good example of this can be found in the Children's Engineering Program that we have at Arlington Science Focus School.

This program uses design briefs to create problem-based learning opportunities for students. This open-ended explorations encourage inquiry learning. They take advantage of what we know about the cognitive process, allowing the students to own their knowledge.

There is a great deal of discussion these days about the importance of innovation and the need for creative thinking. I know of no better way to encourage those skills than through the student-directed learning environments of children's engineering where students problem-solve on a daily basis across all curricula.

Many would tell you that this is all fine, but we have no time in our daily schedules to teach science, let alone teach it in an inquiry-based manner. To be sure, the demands of NCLB and the need to meet annual targets in student achievement take their toll on our weekly lesson plans. But I have found through my own personal experience that science is a powerful motivator for students.

It is through integrated curricula that we are able to bring science into the everyday world. We are able to expand science, not shrink it. We are able to encourage students' curiosity, not stifle it. And we are able to raise student achievement, not slow it down.

I recently introduced my teachers in my school to Engineering Is Elementary. This is a series of storybooks developed by the National Center for Technological Literacy at the Museum of Science in Boston, featuring children from around the world that encounter real problems that are solved with the assistance of an adult engineer in their community.

These books are not add-ons, but add-ins to our curricula, where each unit is aligned with commonly taught science topics and kits. Through the use of this literature, the classroom community is able to share the vocabulary and concept to build background knowledge to further understand science concepts.

The series provides accompanying lesson plans that are multidisciplinary, including literacy lessons, exposure to new cultures, the engineering design process, science data collection, and applica-

tion of game knowledge in developing their own solutions to the problems encountered by the storybook character. This is one example of interdisciplinary learning that provides relevance to science and mathematical concepts with which students will often struggle.

When we became a science focus school in 1994, we developed a core program called Science City. Every Wednesday morning, every teacher in the school, including reading, music, physical education, special ed, and librarians, teach science to a small group of students. The teachers plan four lessons on a concept outlined by the Virginia standards of learning and appropriate for each grade level.

The students then spend a year rotating through the seven Science City groups in 4-week cycles. In this manner, the students observe, experience and value the fact that every teacher teaches science, and science is important to the staff. Science isn't just my job; it is every teacher's job.

Another example of creative integration is our music program led by Mr. Puzzo. He collaboratively works with all the grade levels to provide science instruction musically to our students. One example is the 2nd-grade program entitled "We Matter."

We planned with the grade-level teachers how to integrate the science concepts of the states of matter across the curriculum into the music program, the science resource room, investigation station where I teach, and the science lessons taught in the homeroom classroom. The students have come away from the program singing the songs and understanding the concepts, and some of them years after the program have come back singing the songs.

While I recognize that there are districts that suffer from low scores in math and reading, and they feel the need to focus solely on these topics in order to meet the requirements of annual yearly progress, they do so to the detriment of other critical subjects. Doing this is sort of an academic rob Peter to pay Paul.

A typical view of education is one of a series of subjects taught sequentially in 40-minute blocks, and then on to the next subject. Under that paradigm, I see it is easy to see that adding time to one subject reduces time for another. We spoke to this earlier, and how our life is not segregated into math and science and language arts. It is an integrated program in our life and we need to integrate our curricula to go with that.

This type of curricula is wonderful for children with limited English language skills. They can participate and demonstrate their understanding, even if their oral and written skills are not proficient. What is more, students are able to build a sense of scientific literacy about the world in which they live and the way in which humans affect that world.

Speaking of literacy, in order to integrate science into every classroom, my colleagues often use non-fiction books, primarily science, to lead their guided reading instruction. Every classroom library has equal numbers of science books, fairy tales, social studies books and picture books. The students use these nonfiction topics, often science-oriented, in their monthly writing prompts.

Subconsciously, children learn to value the content that the teachers value because they see that the teachers believe science

is important enough to become woven throughout the school day. They recognize that science must be important to them.

A thought for you to consider in regards to the reauthorization of NCLB: If science literacy is a key to the future success of America, if keeping the United States competitive is critical to our national economy, then science, along with technology, engineering and mathematics, it must be treated as a core subject.

I was pleased to learn that the NAEP Science 2009 framework will include questions relating to technological literacy, as outlined in the NRC's national science education standards. As states revise their science assessments, I think it would be wise to similarly measure technological design skills. These are the skills we need to foster in our students if we want them to become innovators and solve problems, to create new frontiers of science and technology.

As you begin the process of reauthorizing the NCLB, you will be confronted with the emerging needs of science. Reading may have been first and math is now, but science is coming. The U.S. Department of Education and states are beginning to zero in on science because NCLB will require science to be tested in the 2007-2008 school year. This is surely a good thing.

While many districts and states already have state assessments in place, my concern is that there is no measure of progress required, as with the AYP in reading and math. While I may work at a school in a district where science is valued, I worry that administrators and many educators will not invest enough effort in science achievement if there are no incentives or consequences attached to the assessments.

In closing, let me leave you with this thought. Is innovation necessary in America? Absolutely. Is innovation necessary in the elementary classroom? Absolutely. Teachers are by necessity innovators, looking for ways to teach reading, math, science and social studies in real-world situations to help our students grasp the learning. Using science as a medium provides children a platform where we can open their eyes to learning that makes sense.

I feel fortunate that I am able to share my excitement and enthusiasm about science with the students of my school. Integrating science across the curriculum has shown my colleagues and me that given the right environment, we can open eyes and minds of our students to the possibilities of a bright and challenging future.

Thank you very much.

[The prepared statement of Ms. Ablott follows:]

**Prepared Statement of Elizabeth Ablott, Science Resource Teacher,  
Arlington Public Schools, Virginia**

Mr. Chairman, members of the Committee, it is an honor to appear before you today to share my experiences with you as a science resource teacher in the Arlington Public Schools, in Virginia, during the implementation of No Child Left Behind. I have been in elementary education for eight years, currently teaching at Arlington Science Focus School, which has a diverse student population including children from five continents. 41.1% of our students are non-Caucasian and 27.80% receive free and reduced meals. We are one of four team schools where parents apply to have their children attend our school, to receive more science instruction. While we are a public school and held accountable to all of No Child Left Behind (NCLB) guidelines, we do center our teaching and apply science learning throughout our school day and across all curricula.

It seems that under the requirements of NCLB, many schools have focused on reading and math instruction because that is where the testing is required by



NCLB. My experience, however, has not been so dramatically skewed, perhaps because I work at a science focus school. We have embraced the concept of children as scientists and engineers from our opening in 1994. Virginia, especially Northern Virginia, has always valued science instruction and, in fact, the Standards of Learning and state assessments in science have been in place for years.

I am fortunate to work in a school district that provides a strong framework while allowing the individual teachers and schools flexibility in curricula selection and instruction as long as it meets our state standards. A good example of this can be found in the Children's Engineering program at Arlington Science Focus School. This program uses "design briefs" to create problem based learning opportunities for students. These open-ended explorations encourage inquiry learning. They take advantage of what we know about the cognitive process allowing the students to "own" their knowledge. There is a great deal of discussion these days about the importance of innovation and the need for creative thinking and I know of no better way to encourage those skills, than through the student directed learning environments of Children's Engineering where students problem solve on a daily basis across all curricula.

Many would tell you that this is all fine but we have no time in our daily schedules to teach science, let alone teach it in an inquiry based manner. To be sure, the demands of NCLB and the need to meet annual targets in student achievement take their toll on our weekly lesson plans. But, I have found through my personal experiences that science is a powerful motivator for students. It is through integrated curricula that we are able to bring science into the everyday world: we are able to expand science not shrink it, we are able to encourage students' curiosity, not stifle it, and we are able to raise student achievement, not slow it down. I recently introduced teachers in my school to "Engineering is Elementary." This is a series of storybooks developed by the National Center for Technological Literacy at the Museum of Science, Boston, featuring children from around the world that encounter real problems that are solved with the assistance of an adult engineer in their community. These books are not add-ons but rather add-ins to our curricula where each unit is aligned with commonly taught science topics and kits. Through the use of literature, the classroom community is able to share the vocabulary and concepts to build background knowledge to further understand science concepts. The series provides accompanying lesson plans that are multi-disciplinary and include literacy lessons, exposure to new cultures, the engineering design process, science data collection, and application of gained knowledge in developing their own solution to the problem encountered by the storybook character. This is one example of interdisciplinary learning that provides relevance to science and mathematical concepts with which students so often struggle.

When we became a science focus school in 1994, we developed a core program called "Science City". Every Wednesday morning, every teacher (including reading, music, physical education, special education, and all other resource teachers) teach science to a small group of students. The teachers plan four lessons on a concept outlined by the Virginia Standards of Learning and appropriate for each grade level. The students then spend the year rotating through the seven Science City groups, in four week cycles. In this manner, the students observe, experience, and value the fact that every teacher teaches science and science is important to the staff. Science isn't just my job, it is every teacher's job.

Another example of creative integration in order to teach the science content in a timely and meaningful manner, is our music program led by Mr. Joe Puzzo. Mr. Puzzo works collaboratively with all grade levels to provide science instruction, musically, to students. One example is the second grade program entitled, "We Matter". Mr. Puzzo and I planned with the grade level teachers how best to integrate the science concept of states of matter across the curriculum, into the music program, the science resource room (called Investigation Station where I teach), and the science lessons taught in the homeroom classroom. The students have come away from the program, singing and recalling the concepts, years later. He has provided other musicals for multiple grade levels: third grade recently performed one on simple machines, kindergarten on animals using literature from author Leo Lionni as the basis for the program, and we will develop a program this summer for fifth grade on sound and light.

While I recognize that there are districts that suffer from low scores in math and reading, and they feel the need to focus solely on those topics in order to meet the achievement goals of Annual Yearly Progress (AYP), they do so to the detriment of others critical subjects. Doing this is a sort of academic "robbing of Peter to pay Paul". The typical view of education is one of a series of subjects taught sequentially, in 40 or 50 minute blocks and then on to the next subject. Under that paradigm it is easy to see that adding time to one subject reduces the time for another.

I don't believe that education is, or should be, a zero sum game where the subjects are separate and distinct and have to be learned in some form of artificially partitioned blocks of time. Life very seldom comes to us that way. We use math, science, language arts, civics every day and rarely are they distinctly separate blocks of our day. That is why I believe a more integrated curricula is a better model. By tying math and science together with relevant hands-on activities in real-world situations, children will absorb and retain the concepts better. This type of curricula is also wonderful for kids with limited English language skills. They can easily participate and demonstrate their understanding, even if their oral and written skills are not proficient. And what's more, students are able to build a sense of scientific literacy about the world in which they live and the way in which humans affect that world.

Speaking of literacy, in order to integrate science into every classroom, my colleagues often use non-fiction books, primarily science, to lead their guided reading instruction. Each classroom library has equal numbers of science books, fairy tales, social studies books, and picture books. The students use non-fiction topics (often science oriented) in their monthly writing prompts. Subconsciously, children learn to value the content that the teachers value. Because they see that the teachers believe science is important enough to become woven throughout their school day, they recognize that science must be important to learn.

A thought for you to consider in regards to the reauthorization of NCLB: if science literacy is a key to the future success of America; if keeping the United States competitive is critical to our national economy, then science along with technology engineering and mathematics must be treated as core subjects. I was pleased to learn that the NAEP Science 2009 framework will include questions relating to technological literacy, as outlined in the NRC's National Science Education Standards. As states revise their science assessments, I would think it would be wise to similarly measure technological design skills. These are the skills we need to foster in our students if we want them to become innovators, to solve problems, to create the new frontiers of science and technology.

As you begin the process of reauthorizing the NCLB you will be confronted with the emerging needs of science. Reading may have been first and math might be now, but science is coming. The U.S. Department of Education and the states are beginning to zero in on science because NCLB will require science to be tested in the 2007-08 school year. This is surely a good thing. And while many districts and states already have science assessments in place, my concern is that there is no measure of progress required of the science assessments, as with (AYP) in reading and math. While I may work at a school and in a district where science is valued, I worry that administrators, and many educators, will not invest enough effort in science achievement if there are no incentives or consequences attached to the assessments.

Finally, with respect to teacher preparation, certification and professional development, please don't forget the elementary teachers, who, by the nature of their classroom, must be masters of integrated curricula. Elementary teachers need extensive professional development, particularly in the field of science. Often these teachers are hesitant to teach science because of lack of confidence in the content areas. While our students score well on international tests in the elementary grades, imagine where they would fall if our teachers had a deeper understanding of the content areas.

In closing let me leave you with this thought. Is innovation necessary in America? Absolutely! Is innovation necessary in the elementary classroom? Absolutely! Teachers are by necessity innovators looking for ways to teach reading, math, science, and social studies in real world situations to help our students grasp the learning. Using science as the medium provides a platform from which we can open the eyes of students to learning that makes sense. I feel fortunate that I am able to share my excitement and enthusiasm about science with the students of my school. Integrating science across the curriculum has shown my colleagues and me that given the right environment we can open the eyes and minds of our students to the possibilities of a bright and challenging future.

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Chairman McKEON. Thank you.  
Mr. Zeigler?

**STATEMENT OF RAY ZEIGLER, CO-DIRECTOR, MARYLAND  
ARTIST/TEACHER INSTITUTE, MARYLAND STATE DEPART-  
MENT OF EDUCATION**

Mr. ZEIGLER. Good morning, Mr. Chairman, members of the committee. My heart was warmed to hear so many people mention the arts, because that is what I am going to talk about, integrating the arts into the curriculum.

At the Maryland Artist/Teacher Institute, MATI, elementary and middle school teachers and administrators come together in school teams to experience dance, music, theater, the visual arts, poetry, puppetry, playwriting and other forms of artistic expression. Teachers who previously thought they had no artistic abilities find the joy of expressing themselves in ways they had never tried before.

Through the use of trained artists and facilitators, they explore the natural connections among the arts and other subject areas which they teach, whether they be math, science, physical education, social studies or any other content area.

MATI empowers educators to use the natural connections among the arts and other academic disciplines to enhance learning. Every child is engaged in learning. The key word is "engaged."

Some examples: Over the past 2 years, we have been using literacy as a focus. The artists choose a book that is used in many schools and teachers learn ways to explore that book through the arts. We recently produced a 15-minute DVD, which there isn't time to show, but I will leave copies that I hope you will have a chance to look at, that shows what this program does.

The company went out into schools. They interviewed students, parents, administrators and teachers. We think it is pretty powerful and we got Charles Osgood to narrate it. One parent commented on here that the teacher was having difficulty teaching her 4th-grade child the angles until she thought, "Oh, I went to MATI; we are going to dance." And they got them out of their chairs and they choreographed a dance around angles. And she said, "They remembered it."

Many of our schools produce operas. Elementary students under the guidance of teachers learn how to write a script, build the sets using math; design lighting, principles of electricity; write and perform the music; design the costumes; design and sell tickets, art and math. The children learn to cooperate and compromise as necessary for the good of the whole. In doing so, their communications skills are enhanced.

In other words, they are involved in all phases of producing a stage work that not only incorporates all of the fine arts, it includes related content and life skills as well. One 4th-grader said, "For opera, you need a lot of writing skills and you learn a lot of new vocabulary."

These are just a few examples of who the arts motivate people to learn. In a recent publication by the Arts Education Partnership, "Third Space: When Learning Matters," I would like to read just a short quote: "School district officials in Tucson and teachers at Peter Howell Elementary credit the school's integrated arts programs for the improved scores of students on Arizona standardized tests, including improvement in reading and mathematics. District officials commissioned an evaluation that shows the Opening the

Minds Through the Arts Program used at Peter Howell has had similar effects at other schools in the district. Based on these results, the program is being considered for adoption statewide.”

In Montgomery County, Maryland, Congressman Van Hollen’s district, we have three arts-focused schools, and one of the principals of one of those schools, John Shashini, is featured on this DVD. He right now is in Taiwan sharing what we do with arts integration in the state of Maryland.

Other schools in Maryland are increasing their use of the arts because they have experienced the positive effects the arts provide their students. Educators learn the impact of integrating the arts into their curricula on student achievement, self-esteem, school climate, school attendance, and teacher retention, based on evidence revealed in recent research and are own formal evaluations.

Integration also recognizes the diversity of learning styles in children. The arts can open new pathways that correspond to individual learning styles and make it possible for the teacher to engage every child in active learning. All of this comes together to improve student achievement. Research by Catterall, Capleau, and Iwanga has shown that low-income students who have opportunities to regularly participate in the arts, fared better in other academic areas than those who were low-participants in the arts.

Another study by Heath and Roach showed that low-income youth fared better across a wide range of variables from academic achievement to developing leadership skills when the arts were a part of their lives. The arts develop skills and talents that foster imagination, critical thought, and teamwork.

These skills are transferable to the workplace. In 1999, a study of 91 school districts in 42 states found that the arts contribute significantly to the creation of the flexible and adaptable workers that businesses demand to compete in today’s world economy.

In April, 42 of our participants traveled to Milan for a 1-week experience to experience the arts of Italy. In July, MATI will serve almost 200 Maryland teachers, and we are going to have to turn a lot away, and administrators, and an additional 25 from Italy, through an agreement with the Italian Cultural Society of Washington, D.C.

Compartmentalization of academics prevents students from seeing the natural connection among content areas. After all, life is an integrated experience. A truly rich educational experience will help provide connections to enrich the life of every child.

I want to thank the committee for your interest and for providing this opportunity. Through using best practices in arts education and integration, we will help to ensure that no child is left behind.

Thank you.

[The prepared statement of Mr. Zeigler follows:]

**Prepared Statement of Ray Zeigler, Fine Arts Specialist, Maryland State Department of Education**

Good morning Mr. Chairman and members of the Committee. Thank you for this opportunity to focus on the integration of subject matter in our schools in order to improve student achievement. My focus will be on integrating the arts into other content areas.

At the Maryland Artist/Teacher Institute (MATI), elementary and middle school teachers and administrators come together in school teams to demystify and experience dance, music, theatre, the visual arts, poetry, puppetry, playwriting, and other

forms of artistic endeavors. Teachers who previously thought they had no artistic abilities find the joy of expressing themselves in ways they had never tried before. Through the use of trained artists and facilitators they explore natural connections among the arts and the other subjects they teach whether they are math, science, physical education, social studies, or any other content area. MATI empowers educators to use the natural connections among the arts and other academic areas to enhance learning. Most of them leave motivated to try new approaches that they find engage their students in the total classroom experience. Using national, state, and local standards, they find authentic ways to incorporate the arts into their classrooms. Arts specialists serve new roles in their schools as resources for ideas as well as helping to maintain the integrity of the art forms.

Educators learn the impact of integrating the arts into their curricula on student achievement, self-efficacy, self-esteem, school climate, student attendance, and teacher retention based on evidence revealed in recent research and our own formal evaluations. Integration recognizes the diversity of learning styles in children. The teacher must use multiple teaching strategies. The arts can open new pathways that correspond to individual learning styles and make it possible for the teacher to engage every child in active learning. All of these techniques and strategies come together to improve student achievement.

Research by Catterall, Capleau, and Iwanga has shown that low-income students who have opportunities to regularly participate in the arts fared better in other academic areas than those who were low participators in the arts. Another study by Heath and Roach showed that low-income youth fared better across a wide range of variables from academic achievement to developing leadership skills when the arts were a part of their lives. The arts develop skills and talents that foster imagination, critical thought and teamwork; skills that are transferable to the workplace. In a 1999 study of 91 school districts in 42 states and directed by the Arts Education Partnership and the President's Committee on the Arts and Humanities, evaluators found that the arts contribute significantly to the creation of the flexible and adaptable workers that businesses demand to compete in today's economy.

In April, 42 of our Maryland participants traveled to Milan for one week to experience the arts of Italy. In July, we will serve almost two hundred Maryland teachers and administrators and an additional twenty-five from Italy through an agreement with the Italian Cultural Society of Washington, D.C. The significance of this work is now being recognized internationally. Compartmentalization of academics prevents students from seeing the natural connections among content areas. Life itself is integrated. A truly rich education experience will help provide connections to enrich the life of every child. I want to thank the committee for your interest and for providing this opportunity to share our experiences and methods.

#### *Background on the Maryland Artist/Teacher Institute*

We are fortunate in Maryland to have a Superintendent, Dr. Nancy S. Grasmick, and a State Board of Education who recognize the value of the arts in children's lives. Through the vision of James L. Tucker, Coordinator of Fine Arts, and Mary Ann Mears, Chair of the Board of Arts In Education in Maryland Schools Alliance, a partnership was formed twelve years ago between the Maryland State Department of Education and the Maryland State Arts Council that has culminated in an institute that is making changes in the lives of students, educators and administrators. In other words, schools that take the work seriously are succeeding in exciting ways.

The Maryland Artist/Teacher Institute is an intensive staff development program conducted by master teachers, artists, and artist-educators in residential settings. Through demonstrations, seminars, and workshops, teachers are provided opportunities to enhance their knowledge of the relationships among content areas and of ways that the arts can be used to integrate curriculum, content, processes, and skills. Cross-disciplinary teams examine various models for integrating the arts into the school curriculum. The teams also participate in hands-on workshops to become more familiar with creative processes and to develop understanding of the continuous interaction that occurs among the arts and other content areas.

Various models for integrating the arts are explored in order to determine which models best meet the needs of the schools. School designs are developed that focus on raising expectations and standards for student performance. They include aggressive, site-based campaigns to enhance student achievement and self-esteem by infusing the arts across the curricular core of the school. It is not considered merely an arts program, but rather, the goal is an education program based on the disciplined application of the arts across the entire curriculum.

This institute provides opportunities for school-based teams to develop innovative educational programs that enable students to not only study the arts but also learn

through and about them while improving achievement and performance in other content areas. A major challenge is developing and implementing an instructional plan that provides effective teaching for learning opportunities in the arts and that are useful within the variables of the situation—school organization, people, and resources. Within this context, the institute focuses on developing exemplars that embrace innovative teaching for learning strategies, in and out of school collaborations, and alternative ways of assessing student success.

The work of the Maryland Artist/Teacher is based on research as reported in a number of sources. They include, *Putting the arts in the picture*, edited by Rabkin and Redmond, *Champions of change: The impact of the arts on learning*, edited by Fiske, *Critical links: Learning in the arts and student academic and social development*, edited by Deasy, and *Third space: When learning matters*, by Deasy & Stevenson in which ten elementary, middle, and high schools serving economically disadvantaged students in urban and rural regions of the country were observed over three years. This research report describes how the arts created the optimal conditions to engage students actively in learning that matters to them. “The research suggests that educational reform can emerge from the bottom up, when the student becomes the epicenter of school transformation.”

#### *Timeline*

The Institute is conducted in residential settings. Participants are involved in an intensive instructional program 8 hours daily for one week in July. A one-week second session is offered for those who wish to return. In that session, educators experience longer workshops with different artists in order to take them to a higher level of expertise.

During the school year they implement an action plan, developed during the summer institute, in their schools with the support of mentors, teachers, and artists.

#### *Performance Outcomes*

1. Participants will design and implement an integrated, arts-centered educational program that creates an exciting and dynamic environment for learning. The environment places learners at the center of activity and the teachers in diverse roles as instructor, coach, and mentor.

2. Participants will design and implement a coordinated, arts-centered curriculum. The curriculum integrates and embeds the arts as a teaching and empowering tool throughout the entire curriculum while providing fine arts experiences in each arts discipline. The curriculum provides alternative ways for students to acquire knowledge and skills and to experience personal and group success. It provides insight into the uniqueness of others while promoting understanding of diverse cultures.

3. Participants will design and implement instructional strategies that prepare students for the work place. Strategies designed include teaching creative/critical thinking skills required for practical problem solving and decision making, opportunities to develop personal responsibility, and to collaborate and function as team members.

4. Participants will design performance assessment strategies that measure student achievement of standards in the arts and other disciplines. Assessment strategies are an integral part of the teaching for learning process and include demonstrations, performances, and portfolios.

#### *Evaluation*

Participants will have successfully completed the requirements of the program when they fulfill the summer institute’s requirements and all post-institute assignments. Post institute assignments are submitted in written or video formats and include a minimum of two integrated instructional units, evidence of staff and artists collaborations, and documentation of implementation activities. Evidence of completion must be presented at the end of the academic year.

1. School teams will develop an action plan for implementing an arts-centered educational program in their schools during the school year. Successful plans will include goals, objectives, implementation strategies, and appropriate benchmarks for measuring progress.

2. School teams and individual participants will demonstrate understanding of ways to integrate the arts across the curriculum by developing and implementing integrated, performance-based curricular units in their classrooms during the school year.

3. School teams and individual participants will demonstrate ways of implementing skills for success strategies during peer coaching and mentoring interactions during the school year.

4. School teams and individuals will present evidence of implementation of a variety of performance assessment strategies in narrative year-end reports, photo documentation, and video formats.

#### *Conclusion*

There is solid research measuring how the arts boost achievement in math and science. Students who took four years of arts coursework outperformed their peers who had one-half year or less of arts coursework by 38 points on the math portion of the SAT. Students who include the arts in their studies are 4 times more likely to be recognized for academic achievement and 4 times more likely to participate in a math or science fair.

However, study of the arts is intrinsically important. The arts not only are a primary transmitter of history and culture, they contribute to a higher quality of life that is available in no other way. As stated in *Critical Evidence: How the arts benefit student achievement* recently published by the National Assembly of State Arts Agencies and the Arts Education Partnership, learning in the arts is academic, basic, and comprehensive. Through providing effective instruction in the arts, both as discrete subjects and through integration into other content areas, we enrich the lives of our students through higher levels of academic achievement in general, we aid in the development of more positive social skills, we increase motivation to learn, and we help to create a more positive school environment. The body of research supporting these notions is becoming increasingly more compelling. Through using best practices in arts education and integration, we will ensure that no child is left behind.

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Mr. CASTLE [presiding]. Thank you very much, Mr. Zeigler.

We have had a coup since you started speaking. Mr. McKeon had other business. We are going to have votes here in about 15 or 20 minutes perhaps, so I have to take a break for that.

So what we are going to enter into now is each member asking questions of you. We are all allotted 5 minutes. I am going to try to enforce that fairly strictly because of the need to break for votes and trying to keep somewhat on schedule.

And I am going to violate everything by asking a question I am going to ask each of you to answer, but when we get to the 5th minute, I am going to have to shorten it. I have already taken about 40 seconds doing this, so you have about a minute each to answer this.

My general question—and I will start with Mr. Lydic and go across: Is there any measurement of the academic achievement by the integration process that you all have discussed here, the innovation and the integration which you are doing?

To me, seeing it and hearing what you are saying, it seems to me that these students are improving and some of your overall test scores in schools have improved. Mr. Holt sort of talked more generally about that. But my interest is whether or not there is a measurable way we can say that this integration is working.

And then the second part of this, you can answer either part, maybe not both if you don't have time, is: Are other educators with whom you come into contact, that is teachers and principals, as enthused as all of you are? I would like to transfer all of you to the classrooms all over the country, but I am not sure they are all that enthused about it. Some think that is ridiculous, "I teach English, nothing else," or whatever it may be.

So I am sort of curious about that. So if you could discuss either of those questions. We will start with you, Mr. Lydic, and work as long as we can for 5 minutes.

Mr. LYDIC. OK. I will address the first question.

As far as a measurement tool, to see how what I am doing in my classroom is impacting on our state test scores, there is nothing in place as such at our school at this point. I certainly would be open to that.

I think that would be something that would be worthwhile because I think the better measurement tool we could have for that would put a spotlight on physical education and get children moving and to get more physical educators to incorporate academic content standards within their curricula.

Like I had mentioned in my testimony, it is a wonderful environment to incorporate and to integrate. It is very difficult, I think though, to come up with that tool to measure, and I am certainly open to suggestions for that because I would love to see a connection between what I am doing in my classroom and students achieving. It would help me and it would help me further develop my program, additional funding for my program.

To address your second question, I have been very lucky this year as a state teacher of the year to meet 50 other state teachers of the year, to see the enthusiasm. We meet four times a year for about a week each time, and we just walk away just extremely, I mean, we are already enthusiastic to begin with, but it is just a powerful opportunity.

We were talking about it on the way here that it would be really a neat opportunity for you to have government officials come and see some of the things we are doing in that program, as well as other teachers around the country. But to that particular program, I feel I walk away with more enthusiasm and energy than any other professional development that I have ever done.

Mr. CASTLE. Thank you, Mr. Lydic. Maybe we should have them all in here at once, all 50 of them.

Dr. Garrison?

Dr. GARRISON. I am not familiar with any research that has looked at an integrated curriculum. However, I am going to use our school as a test site in that before we started being very intentional about integrating curriculum, our test scores were not what they are today.

In the summary that I submitted, it is pretty powerful information that when you start looking at 3rd-graders, 4th-graders, and 5th-graders that across the board our lowest percentage of achievement is 94 percent, and that is science in 5th grade.

So unfortunately, I can't reference anything, and I am not sure how you can measure it unless you did something like an AB-design to determine pre-and post-impact, but I am sure somebody else can think through that one when they have a little bit more time.

In thinking about the enthusiasm, I am going to say that without passion you shouldn't be in education. And so in addition to having a passion for making a difference in children's lives, I am going to also suggest that success breeds enthusiasm. Based on everything I have heard here, it could be contagious in that we have seen a lot of success and overcome many hurdles.

And so helping other schools actually figure out how to get that success rate I think is wonderful. I would be happy to replicate this



anywhere else, just to prove the fact that it can be done in a rural school or in an urban school.

Mr. CASTLE. Thank you, Dr. Garrison.

Mr. Holt, you may have to be the last one because the lights are coming on.

Mr. HOLT. I will be quick.

As far as specifically measuring the effectiveness of integration across the subject areas, I don't know that I could specifically speak to that, but I can tell you, again if I talked about our journey from a failing school to an "A" school, I can say that integrating the subject matters has been a part of that journey. If you just look at our overall test scores, they have improved dramatically.

I will comment on one strategy that we used to integrate the subject areas, and it is a program that our teachers are currently being trained in. It is called "Real Reading in the Middle." What it does is it teaches the teacher specific reading strategies that they can use anywhere, anytime, not just in reading class.

The specific strategies are taught in social studies and in science. They could be taught in physical education. They can be taught in art class. They can be taught anywhere. That is a program that was brought to us by a group that we are working with called "Michigan Middle Start." I have some information available for you here today. It has been a real, real effective tool in getting us to push reading across all areas of curriculum.

Just real quickly on the matter of enthusiasm, in my building, you will find people a lot more enthusiastic than I am. Success breeds success. We have tasted it, and we are never going back to the way things were before.

Mr. CASTLE. Thank you, Mr. Holt.

I think I had better call a halt if I am going to enforce this 5-minute rule.

I turn to Mr. Miller now.

Mr. MILLER. Thank you. I will be very quick.

If I might, Dr. Garrison, you mentioned the transition from 2003 to today and the really high levels of performance on the Oregon achievement exams of your students. I would just like again for you to outline where your students are coming from, the community and the unemployment and the income and the rest of that.

Dr. GARRISON. Our community has one of the highest unemployment rates in the state. Our increase of students that are economically disadvantaged keeps growing. So at this point, we are 67 percent free and reduced lunch. So our children are coming with a lot of challenges. We have a lot of students who are homeless. I am going to also suggest that some of them, their basic needs are not met on a daily basis.

So when you look at achievement and what we have done, one of the things that I have repeatedly just reminded staff and they are aware of is that socioeconomics does not put a cap on learning.

Although we don't have the mix of students that you would find in schools locally in your area, I am going to suggest that really the dividing rod in our country is socioeconomics. It is not skin color. It is not language. It is money. That is a common thread that many of our schools are challenged with.

Mr. MILLER. Thank you.

Mr. CASTLE. Thank you, Mr. Miller.

Mr. Osborne is recognized for 5 minutes.

Mr. OSBORNE. Thank you, Mr. Chairman.

Thank you for being here today. I appreciate it very much. I do appreciate your observation on socioeconomic being the great divider. I saw that so clearly myself.

I think obviously all of you are very talented and very creative people, and have some great ideas. But in terms of policy, we are charged with the task of trying to make No Child Left Behind work. So what I am really interested in are your thoughts on whether testing every year in grades 3 through 8 is essential; whether it is working; whether it is onerous, because we hear both sides of it. We hear teachers say, "You know, I am spending all my time testing, and this gets in the way."

The evaluation also is very burdensome to some teachers and maybe somewhat threatening to some superintendents and principals as well. And then we are also hearing complaints about funding, that it is an unfunded mandate, that we are putting all this on the schools and we are not providing the funds.

So those are the things I would be interested in hearing from you about testing, whether you think it is adequate; whether it is too burdensome; the evaluation, the annual yearly progress, whether those things need to be improved; and then last on the funding issue.

I guess if each one of you would want to take a shot at any one of those three. Obviously, all of you can't talk about all three, but if there is one of those issues that is of particular interest to you, I would be happy to get your views on it. In any order, I am not going to single anybody out.

Mr. LYDIC. I guess we start with me and go down the line again.

To address the question of do I think the testing is appropriate or do I think it is a good idea, I think it is always a great idea to take a hard look at how things are doing, and testing is certainly I think one of the best ways to do that.

Can the tests be improved? Certainly it can be improved. When you take a hard look at yourself, what is happening, and what I have seen in the last 5 years is that educators are talking more and more about how we can get better. I think that getting better in any profession at anything is what we strive to do, and education shouldn't be any different.

What I do see is I see the testing, and maybe an unintended consequence possibly in a lot of different areas, not specifically my area, to be graphic anyway, is that certain programs, physical programs, movement programs, arts, are being cut because the priority is getting those test scores up. In doing so, I think the limited scope of the focus is on math, reading and science, rather than integrating and rather than developing the whole child.

So I think that may be my concern about it, but I still think that it is a positive tool.

Dr. GARRISON. I think testing is part of teaching. So when you look at some of the informative information, you don't know if what you have taught is going to make a difference for the learner. I don't feel, however, that one test point or one data-point is indicative of what a student has learned over time.

One of the things that I would encourage you to look at is growth, because we receive many students that are from migrant families that have been in several different schools before they ever reach our school. When they get to us, sometimes it could be the day before we actually do assessments. What I would rather look at is the growth that that child makes versus what their performance is on one single day.

I would also encourage you to look at, and let me back up for just a minute. I am supportive of the assessment, and I don't feel that we teach to a test, and I don't feel that we spend time teaching to a test. I also am going to suggest that we do very much what you have done, and that is we look at that data ongoing and we use professional learning teams to make decisions and to assess what we are doing, because you can't teach in a vacuum. You have to look at if your students are getting the message that you hope that they are getting.

One of the other areas I would encourage you to look at are the subgroups, because when you start looking at students with special needs, I am going to again say growth is more important than just looking at what they should achieve, and 100 percent performance would suggest that they don't have special needs, and they do have special needs. That may mean linking it back to a student's IEP and looking at growth over a year would be a wonderful way to determine if a student with special needs is actually learning or not.

Mr. HOLT. I am going to build on what Dr. Garrison just said in talking about the subgroups. That is an issue that really does need to be examined carefully, and especially in the relation of when you are talking about students with special needs. It really should be looked at closely and analyzed before any changes are made or in the context of possibly making changes.

Getting to the broader question of testing are we testing too much, that is difficult to say. Of course, I hear that charge, too, but my attitude is, here it is. The law has been passed. The tests are there. That is our challenge and we need to do everything we can to meet those challenges.

It is not done too much if you use the information in a useful way. If the tests are valid measures of what the kids are learning, if the schools are using the information to modify and change their instruction and then continue to evaluate, then it can be a positive thing. But the key is that they are used in the proper way.

Mr. CASTLE. Let me cutoff this answer now so we can go on to others. Perhaps I would suggest that we start with Mr. Zeigler next time so that he has an opportunity to say something here as well.

I turn to Mr. Kildee for 5 minutes.

Mr. KILDEE. Thank you, Mr. Chairman.

Many people have expressed concern about the narrowing of the curriculum because of No Child Left Behind, the emphasis on math and reading. I am particularly concerned about that as co-chair of the Native American Caucus, and Title VII, because the Department of Education wrote to schools in St. Paul, who have a number of Title VII schools, saying that we accept your program this year, but next year we want a shift from history and culture to reading and math.

That is the strong arm of the U.S. Department of Education reaching into the local schools, talking about curriculum. When the Department of Education was set up, and I was here, I think my 1st year in Congress in 1977, we were forbidden to set a national curriculum. But when you do have the long arm reaching in and telling them to move and shift their emphasis, I do worry about that.

I have been encouraged, though, by what all of you have said, how you are trying to, while emphasizing the importance of reading and math, that you are really trying to integrate these programs into all of the education. It is encouraging, but could you extrapolate on that some, and give some examples where you are not neglecting the other areas of education, the history and culture and these matters?

I am going to start with you, Mr. Zeigler.

Mr. ZEIGLER. Our fine arts standards, in the first place, do speak to all of that. We are finding that more and more throughout the state that in schools particularly involved in integration of academic content areas, they are able to reach the standards, the state standards, and we use the national standards as well, by new methods and new means.

By the way, I would just like to add there is a wonderful compendium of research, "Critical Links: Learning in the Arts and Student Academic and Social Development." This is a compendium of over 60 studies, very thoroughly researched studies, that is available. It was printed here in Washington. It does show the connections.

As I had said earlier, I think the more we compartmentalize, the more we tend to alienate students. As someone said to me recently, "If someone is doing poorly in math and they don't like math and you double the amount of math they have, they will hate it twice as much." And there are other ways to get to it. And we have heard a lot of testimony today of ways it can be done. I think we are opening some wonderful new opportunities for students here to reach all of the content areas in new ways.

Ms. ABLOTT. What our school for science focuses on, we have an investigation station, which is the science resource room. The students rotate through there. We use literacy to present information to them. The students write in their science journals. In our "Science City Weekly," the students will write each day, they journal in what they have learned that day, so that we integrate the scientific writing, as well as just journaling, so that that is part of their daily life as well.

We use a lot of questioning with the students so that they develop their own learning. I model that style of teaching. The teachers stay in the classroom with me and we work collaboratively, so that we can work across the curriculum. The students, in their morning time have their science books that they are learning about the silkworms that we are observing in the investigation station, and they are doing math to measure them.

It is funny. The students, when it is time for math, and sometimes the investigation station, will come up with, OK, we need to measure and how do we make a graph out of this data that we have collected. And we will say, "Well, that's math." And unfortunately, even in our school when we try to cross the curriculum that

way, they still compartmentalize themselves. So we work constantly to say, well, math is part of science, it is part of our life, this is what you need to do. We don't just do that during math class.

We also use literacy in all area contents in order to make the students know that. In social studies, we use "History Alive," which is a journaling. They draw pictures. So they write about it. They act it out.

We move around as much as we can. In music, in P.E., we also integrate. She teaches math skills, science skills, they use grouping. So we use all the concept areas, all the teachers are familiar with the standards of learning for all grade levels. And we work collaboratively as a team. We have team priority time every day so that we can work together in order to bring skills up that interest them, bringing the students to a higher level.

Mr. KILDEE. Thank you.

Thank you, Mr. Chairman.

Mr. CASTLE. Thank you, Mr. Kildee.

Let me just make this announcement. We have our votes here shortly, and we are talking about 10 or 12 more minutes in which we can continue to answer questions. Because it is three votes, it is going to be very hard to bring everybody back, so hopefully the members can cooperate, and we need to keep everything relatively brief, so we can try to fit everybody in.

I recognize Mrs. Biggert for her comments for 5 minutes.

Mrs. BIGGERT. Thank you, Mr. Chairman.

I am so impressed with all of the testimony today and how much you are doing to integrate. I think I hear more from so many educators who are in my district that are not able to do the other things besides reading and math and science. And here you have this program that brings in all of them. They say, what happened to the gifted program? What happened to the art program? What happened to the music program? We don't have time.

I think that you all have really been able to really move ahead and provide a real balanced curriculum to your students, as well as further the learning by integrating it. So I would like to know, when you find ways of linking the curriculum, how are you spreading that information to other teachers in your school or in your district, or to other surrounding districts? Is there a way that you do that?

Ms. Ablott?

Ms. ABLOTT. We have a collaborative team planning time so each grade level can plan together. On Wednesday afternoons, we have early dismissal, so we have a time when all the specialists, like I as science, the music and reading teacher, we can meet with the grade-level teams as well, to work collaboratively to share the learning.

We have professional development that we as a group decide that we need to work on our reading skills, so that we will have the speakers come to our school and the county requires that we attend two in-services each year to extend our learning as well.

We have lead teacher meetings, where each building has a science, reading, math and social studies lead teacher. We meet three times a year where we share ideas. We have professional de-

velopment there that we take back to our buildings, and things to share with the teachers. And so we can commute between buildings.

We have, of course, the email system. The county can set questions for the staff, for the lead teachers, and we can discuss it online and get back to each other. We have a blackboard where we can have a discussion board and discuss things as well, so there are a variety of ways.

Mrs. BIGGERT. Are there ever any teachers that say, you know, "I am a traditionalist. I teach math, and that is all I am going to do. I don't want to be bothered with bringing P.E. in there and everything"? Do any of you have any problems with that? And how do you solve it?

Mr. Holt?

Mr. HOLT. There is kind of an old saying, "You plow around the stumps." And that is what it gets down to. As we said earlier, success builds success, and you find things that work, and when people see that you are having success and people see that things are working, pretty soon they are on board.

To get to your first question about sharing, everything we do in my building is done together. It is not a collection of a bunch of one-room schoolhouses or independent contractors. We are a team. We work together. We found that has been what has worked, so when folks see that, they want to be a part of that.

As far as sharing it with other districts and other places, that is difficult to do, and that gets to the area of funding that Dr. Garrison talked about. In Michigan, it is different than Virginia, and a lot of places where you guys are from. In Michigan, every community almost is its own separate school district, as opposed to Virginia where each county has a district.

So you may have a district like where I am in Johannesburg-Lewiston that is relatively healthy financially, right next door to one that is not, and they simply can't do the things that we are doing. The funding is just not there. So there are other challenges for some of the folks that we are not faced with.

Mrs. BIGGERT. Dr. Garrison?

Dr. GARRISON. We get the word out within our school, and actually throughout our state. We do a pretty good job, and sometimes we cross state lines. Within our schools, we have ladder team meetings, so our teachers meet K through 5, because as Mr. Holt was saying, to have an independent contractor work in isolation means that nobody is learning from each other.

More importantly, our students are not benefiting. So they talk about strategies and approaches, and apply what they have analyzed within their data. We also work really hard at having teachers be leaders within our school so that they are in fact leading the development. I have a lot of experts who are incredibly knowledgeable. So they definitely take the bull by the horns and take that on.

We have become onsite within our district because we take a lot of risks, and so far we have been lucky with the risks we have taken. So we have become a model school where other schools come and visit and get ideas and observe in our classrooms.

I also continue to consult because it generates revenue, and the money goes back to my school. That consulting means that the word gets out within Oregon because I do a lot of contracts within our state, and also I cross state lines. So I am able to share some of what we do.

Mrs. BIGGERT. Thank you.

Mr. CASTLE. Thank you, Mrs. Biggert.

Mrs. Davis?

Mrs. DAVIS OF CALIFORNIA. Thank you, Mr. Chairman.

Thank you all for being here.

One of the things that No Child Left Behind didn't focus on was principals, and the quality of principals. We focused so much on the quality of teachers. While we have you here, and we can't clone you, that is not an option, could you talk a little bit about what you think might be appropriate in reauthorization as it relates to principals?

That may be difficult for you to go there, but you obviously have been doing a lot of what you were doing before No Child Left Behind, meaning that the attitude of working together, the collegiality with the schools, and perhaps even those of you, not necessarily principals, but obviously you have experience with instructional leaders that make that happen. What could you offer us, what would you like to share that you think might be an improvement, and might be a real value-added as we go into reauthorization?

Mr. HOLT. I really don't know how you would address that through legislation. Just to speak in general terms, the principal's job is the best job in the world 99 days out of 100. There is that other day that comes up every now and again, but I am sure we all have had those in our professions in what we do.

Simply encouraging our best and our brightest and our most energetic teachers to step forward and to take on the challenges of becoming principals, to me that is key in really developing the profession and helping schools achieve at the levels that we want them to. One of my professors in college once said, "A great principal can't take a bad school and make it excellent, but a terrible principal can take an excellent school and put it in the tank pretty quickly."

So the point being that a principal really brings out the best in the people around him, he or she, if they do their jobs and they do them effectively, and teachers know all about that. So if we can just encourage our best and our brightest teachers to step forward, I think we would be doing a service.

Dr. GARRISON. I am not sure how you address it either, but there are some things that I see that I think make a huge difference. In several districts that I work in as a consultant, administrators change too often, and that change is not necessarily in the best interests of staff or students. I don't know how you make, I guess you do, make a law that says no, it needs to be much more stable for effective change to actually take place.

So from my perspective, if you have a good administrator, sometimes they get moved up the ladder, so to speak, and that is not necessarily in the school's best interest or in the staff's best interest.

Mr. LYDIC. I would like to give a plug to my administration. I agree with both Mr. Holt and Dr. Garrison that the leadership is the most important, I think, for a school to achieve. When you have an administrator who gets out of the way and lets you teach and facilitates and gives you the encouragement and the support that you need, it encouraged me to open up my vision to see what opportunities I can do, and it kind of fueled my enthusiasm to kind of integrate and to build my program.

So I agree with them, that an encouraging, supportive administrator, who also can make tough decisions, is what we are looking for if we are going to put anything in legislation.

Mr. CASTLE. Ms. Davis, can we move on to others? We are trying to finish the hearing in the next 8 minutes, if we possibly could. I don't mean to cut you off.

Mrs. DAVIS OF CALIFORNIA. It is OK.

Mr. CASTLE. Sorry.

Mr. Ehlers is recognized for as little time as he possibly can use.

[Laughter.]

Mr. EHLERS. I will try to hold it down to 15 minutes.

[Laughter.]

First of all, several comments. I think, Ms. Ablott, you were the one who mentioned the need for including science in the measure of AYP. That was the original intent when we passed the bill, and we inserted science to be assessed. But because very few schools were doing it, we postponed it, but clearly it should become part of the AYP.

On the general topic here, what I have heard is wonderful, but to me not surprising. I think what we really need to learn more about, and what you are doing experimental work in, is how to integrate information and knowledge. I don't think we understand that nearly well enough. The educational psychology of it has stimulated a lot of questions in my mind, and I think we need to have those questions answered.

As an example, and I should mention I am a nuclear physicist, but I have had a lot of involvement in elementary schools as well. Mr. Zeigler, it is absolutely no surprise to me that integrating the arts helps in teaching math and science. As a physics professor, the students that we had that I lost from physics majors almost invariably went into either music or arts. They were good physics students, but there is something about the way the mind works that combines those things.

Geography is a wonderful subject to integrate a lot of math and science. Unfortunately, many schools have dropped geography. I just commend you for what you are doing. It is just really good work, and your testimony has been extremely helpful to us. The Federal Government cannot set the curriculum, but we have to set standards which can help. If they are done properly, it is very important to leading people in the direction of the things you have been doing.

I think, Dr. Garrison, you talked about "teaching to the test." That phrase has always irritated me because if the test is done properly and the teaching is done properly according to the standards set, you automatically teach to the test without even trying to. I commend you for bringing that out in your testimony.



I really don't have any questions, except that one: How can we better learn how the brain integrates information? Do any of you have any ideas for just 1 minute?

Mr. CASTLE. We have to make a decision here about whether we are going to come back or not. We can't get everybody in if we start going in to questions.

Would it be possible to abort the question and go on to the others and let them make a brief statement? People can't come back.

Mr. EHLERS. That is fine.

Mr. CASTLE. Thank you, sir. I appreciate it.

Mr. EHLERS. Perhaps you can let me know later. I will stick around.

Mr. CASTLE. And by the way, we can submit written questions, which you may want to answer. That can happen as the process proceeds.

Mr. Kind is recognized.

Mr. KIND. Thank you, Mr. Chairman.

I want to thank the panelists for an excellent presentation today. It does give us some hope and encouragement about No Child Left Behind. It has, needless to say, been very controversial in its implementation. I think a lot of the teachers still have huge question marks about the value of No Child Left Behind. I think it is because teaching is such a personal profession. Teachers want to maintain control and flexibility and creativity in their classroom.

When they see the mandates of mandatory testing 3 through 8 and the pressure and the high-stakes test, they feel they are using that kind of creativity. That is why it has been fun listening to your testimony, trying to seize on the moment and use your innovation to make the best of this legislation. It is going to be an important reauthorization coming up.

Dr. Garrison, I do take to heart your testimony that we need to have adequate and stable funding streams for this, yet this hearing is being held in the shadow of a budget resolution that passed last night at 1:30 in the morning that is \$15 billion below the authorized level for funding No Child Left Behind.

That actually goes backward in the Federal support for special education funding, from 17.7 percent down to 17 percent, when there has been a bipartisan goal to get to a 40 percent Federal cost share for special education. So in effect, we are going to continue to pit students against students for the limitation of resources in the classroom. That is not the right way to support you all, and our local schools, with the tools you need to do the job.

Mr. Lydic, what I wanted to do is shift back to you, because one of the things I am hoping to get accomplished in the reauthorization is with physical education. Right now, it is not one of the core academic subjects. It is real neat hearing of your integration of the curriculum with P.E. If you do a survey nationwide, and studies are coming in, it is a hodge-podge out there. Some schools are dropping P.E.

In fact, there was a national report the other day that showed that some elementary schools are even dropping recess because of the high-stakes tests that are going on. I think that is a mistake, given childhood obesity, Type II juvenile diabetes, the whole healthy body/healthy mind concept that we have to embrace as

well. I think your approach is very novel. I would like to follow-up with you in particular to see what we can do to try to turn this around in time for reauthorization.

I am also disturbed as a father of two little boys seeing more studies coming back that our boys in classes are starting to underperform at all levels. I think one of the ways of reaching them is through physical activity and integrating a lot of these subjects with physical activity, because a lot of them are not wired.

I know as a kid growing up I didn't like to sit still in class for a long period of time and do my class assignments. So I think there are a lot of different opportunities and the value of having a focus on P.E. education and how we can integrate the various lesson plans in it.

I am not going to ask a question because I know the others want to go on, but thank you, Mr. Chairman, today.

Thank you all.

Mr. CASTLE. Thank you, sir.

Ms. Woolsey is recognized.

Ms. WOOLSEY. Thank you, Mr. Chairman.

We had a breakfast this morning about how important principals are and how important teachers are. You are a panel that proves that point. You are excellent and I thank you.

There are two things I would have asked, and maybe we can have the answers in writing. The first one is, based on your experience, what are the factors in addition to math and reading, which are tested now and required by No Child Left Behind, what are the other factors that schools can look at to measure student progress or AYP as it is called under the law, so that we would not just have one measure? I am preaching to the choir here, it sounds like.

Then each of you spoke eloquently about reforms that you have implemented. Can you tell us what can we do in reauthorizing the law that would encourage more innovation? So what is getting in the way of innovation? Not you, because obviously you go ahead with it anyway.

Thank you, thank you very much.

Mr. CASTLE. Thank you, Ms. Woolsey.

I see you are writing. If you would submit those, we can do it formally, but if you could informally submit to the committee your answers, that would be helpful.

Mr. Holt has been kind enough to wait, but I want to give him a minute to say whatever he feels needs to be stated.

Mr. HOLT OF NEW JERSEY. I would appreciate your comments on Mr. Ehlers's assertion that science should be included in the adequate yearly progress measurement. I guess what I take from your testimony is that it is a lot more important what sort of teacher professional development we have and what sort of school supervision and coordination we have, than exactly what curriculum we have.

So I guess I would like to know, you have kind of touched on this, but really what I would like to know is what policy we need so that everything you have talked about this morning will seem not the least bit out of the ordinary.

Mr. Ehlers said he is not surprised that arts experience improves the integration of the other subjects, and so forth. Sure, but not

every school is doing that. The question is, how do we do that? No Child Left Behind was trying to do this in reading and math, but how do we get that integration from a policy perspective?

Thank you, Mr. Chairman.

Mr. CASTLE. Thank you, Mr. Holt.

Let me thank all the members. I apologize to those who we had to rush here at the end.

Mr. EHLERS. Mr. Chairman, may I just make one quick comment?

Mr. CASTLE. Certainly.

Mr. EHLERS. I just wanted to say that 30 years ago we learned that teaching science improves the learning of reading. We have never pursued that, but just recently a report came out which verified that in much stronger terms. I just wanted to get that statement on the record.

Thank you.

Mr. CASTLE. If you haven't figured it out, these two gentlemen are scientists. They talk about science a great deal.

Let me thank you all. We are going to have to rush off and vote. I apologize to those who are from Delaware. I won't be able to say good-bye because I have to rush quickly to the vote. But let me thank you all very much.

I do want to apologize to the members whom we had to sort of short-change a little bit here, but once the votes begin, it is very hard to continue these hearings.

And let me thank the kids, who were just remarkably well-behaved for a 2-hour session. We thank them.

It has been fascinating. You have been great, and thank you very much.

With that, we stand adjourned.

[Whereupon, at 11:46 a.m., the committee was adjourned.]

[The prepared statement of Mr. Castle follows:]

**Prepared Statement of Hon. Michael N. Castle, a Representative in  
Congress From the State of Delaware**

I am excited to be here this morning for the first of our upcoming hearings on No Child Left Behind, and to hear from all of the witnesses who have taken time out of their schedules to share their various teaching methods with us.

Over the course of the past several years, I have often argued that we are encountering one of the most exciting times in education. I have said this, and continue to say this, for a couple of reasons. First, we are all engaged, as a country, on closing the achievement gap. This conversation is happening at all levels of government, amongst parents, academics and especially in our school systems. This dialogue and support is key, and provides necessary momentum. Second, which will be highlighted today, is the fact that our educators are not shying away from the demands of No Child Left Behind. Over the course of my visits to schools, and in almost every press report, I hear about a teacher, administrator, or parent who has done something to raise the achievement level of the students in their lives. We must all remember that ultimately the point of No Child Left Behind is the needs of our students.

One of my visits took me to Laurel Delaware, where I met Garrett Lydic—who is here to testify before us today. I do not want to give away any of his testimony, but as soon as I saw him in the classroom with his students, I knew that I wanted to share what I saw with my colleagues. Quickly, I learned that innovative teaching methods, and integration like his are happening in many schools across the country.

What is interesting, and we sometimes don't think about in education, is that in our everyday lives we integrate various subject areas. Think about your day, and you'll notice that it is rare that you ever sit down to a task and focus solely on math or history or whatever. Not only is integration realistic, and yet another way to

make learning fun, but it defeats those skeptics who believe that No Child Left Behind “narrows curriculum.” I look forward to hearing from all of you, and thank you for being with us today.

After years of implementation, we have reached a point where we are able to both discuss implementation of No Child Left Behind, as well as the impending reauthorization. I want to thank Chairman McKeon for working with me when deciding our list of hearings—I look forward to working under your Chairmanship in highlighting No Child Left Behind’s successes, and identifying ways in which we will be able to improve the law. Because one thing is for sure, it is here to stay. Finally, I’d like to recognize Ranking Member Miller’s staunch support of the law. I very much look forward to our continued partnership.

#### INTRODUCTION

Mr. Garrett Lydic—Mr. Lydic is a Physical Education teacher in grades 2 through 4 at North Laurel Elementary School in Laurel, Delaware. He has recently been chosen as Delaware’s Teacher of the Year for 2006. As a teacher Mr. Lydic has excelled in integrating academic subjects into his physical education curriculum. Also joining Mr. Lydic are some of his students; Alyssa Givens, Gaby Culver, Shanda Mann, Alexa Fetty, Natalie Sava, and J.T. Tyndall.

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[The prepared statement of Mr. Norwood follows:]

#### **Prepared Statement of Hon. Charlie Norwood, a Representative in Congress From the State of Georgia**

Mr. Chairman, I thank you for hosting today’s hearing. In the four years since Congress passed and the President signed the No Child Left Behind Act into law, a sea change in American elementary and secondary education has taken place. For the first time in many years, American schools are being held accountable for achieving results, the federal government is spending money on programs that actually work, and students are not simply falling through the cracks of the public education system.

In short, our schools are finally making progress after years of plummeting student performance in core reading and math skills. That is obviously a good thing, and the most critical elements of the No Child Left Behind Act (NCLB) are responsible for this transformation.

NCLB put in place an invaluable national testing regime that gauges student performance on year-by-year basis, along with a “report card” for parents that grades school achievement levels.

Without the information generated from the report cards and the annual testing, parents would still be in the dark regarding their kids’ school performance, and they would have little-to-no idea how their children stack up against their peers throughout the state. Parents need that information in order to make informed decisions about the children’s education, and they are using the new information to take control of their children’s future.

The NCLB legislation also mandates improved teacher quality requirements that ensure all students are being taught by a highly qualified teacher. This is also a good thing. After all, how can American children expect to compete with their Chinese peers if their teachers are not qualified to properly teach critical math and science skills that form the building block of knowledge-economy jobs?

These accolades are not political talking points. They are simply the facts that are clearly visible in long-term trend data released by the National Association of Education Progress (NAEP) that reveals significant improvement in student achievement since the NCLB laws went into effect. Reading and math scores are up across the board—most notably in minority communities—and many states are beginning to make real headway in placing a qualified teacher in every classroom.

Now this does not mean that we here in Congress can slap each other on the back and congratulate ourselves on a job well done. In fact, we still have a long way to go in order to ensure that every school can make adequate yearly progress in reading and math scores. We must also continue to push the states who are not working hard enough to put a qualified teacher in every class-room.

Some critics believe that the federal law’s particular focus on math and reading assessment causes school districts to ignore other important subjects. In my own home state, I hear from folks that believe NCLB forces teachers to “teach to the test,” which distracts their attention from more creative and comprehensive educational pursuits. If this is the case, and I’m not sure that it is throughout the majority of the schools in Georgia, we ought to pay close attention to the testimony

of our witnesses here today. After all, a rich and varied curriculum is critically important to the development of our young people.

Our Committee has a responsibility to fully investigate this issue, fix what needs to be fixed, and continue examining NCLB to improve federal education policy. This hearing is a good first step in our effort to fulfill that goal.

I thank you for the time Mr. Chairman, and respectfully yield back.

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[The prepared statement of Mr. Porter follows:]

**Prepared Statement of Hon. Jon Porter, a Representative in Congress  
From the State of Nevada**

Good Morning, Mr. Chairman. I am pleased that the committee is holding today's hearing on the impact of No Child Left Behind's expanded focus on reading and math. I appreciate our panel of witnesses for joining us today and the diverse perspectives that they can provide us on this important issue.

One of the building blocks of our nation's success throughout our history has been the ingenuity and invention which allow us to continually overcome the challenges we face and fill the needs that we have. This ability has traditionally been the product of a free-thinking and open society, in concert with the excellence of the education available to us. As our dynamic economy continues to grow, we must continue to rely on this ingenuity and vitality of thought. Excellence in the fields of math and science must be a priority for this to occur, as our increasingly technological society requires increased research and scientific engagement.

The basis for these abilities lies firmly in the ability of our elementary and secondary schools to provide the highest quality math and science education available. To ensure that this education is of the finest quality, Congress, in concert with States, local education agencies, and institutions of higher education, must strive to provide the necessary incentives to bring our best and brightest math and science teachers into the classroom.

In my own school district, we hire approximately 3000 new teachers per year. A significant portion of these slots are teachers of math and science. Our tremendous growth has brought significant challenges in recruiting the finest teachers. We can all work together to engender greater interest in these fields, so that we can continue our strong tradition of technological advancement.

Again, Mr. Chairman, thank you for calling this hearing today on this most important issue. I look forward to the testimony of our witnesses and am hopeful that we can work together to provide excellence in math and science education to all of our students.

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[Additional statement from the National Council for the Social Studies follows:]

NATIONAL COUNCIL FOR THE SOCIAL STUDIES,  
May 25, 2006.

Hon. BUCK McKEON,  
*Chairman, Education and the Workforce Committee, 2181 Rayburn House Office  
Building, Washington, DC.*

Hon. GEORGE MILLER,  
*Ranking Member, Education and the Workforce Committee, 2101 Rayburn House Of-  
fice Building, Washington, DC.*

DEAR CHAIRMAN McKEON AND REPRESENTATIVE MILLER: Thank you for the opportunity to submit this testimony and to convey the conviction of the National Council for the Social Studies' (NCSS) more than 26,000 members-around the nation and the world-that social studies is an invaluable discipline that should be included in conversations about federal priorities and investments in education-especially during the upcoming debate around the reauthorization of the No Child Left Behind Act (NCLB).

The mission of the Council is to provide leadership, service and support for all social studies educators. Social studies educators give students the content knowledge, intellectual skills and civic values they need to fulfill the duties of citizenship in a participatory democracy.

We look forward to working with you and your staff in the coming months on this important work.

Thank you again for this opportunity.  
Sincerely,

SUSAN GRIFFIN,  
*Executive Director.*  
JEFF PASSE,  
*President.*

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### Prepared Statement of the National Council for the Social Studies

"The United States and its democratic system of government are constantly evolving. No one can predict with certainty what may be needed from its citizens to preserve and protect it fifty years from now. For social studies to perform its mission of promoting civic competence, students must learn not only a body of knowledge but [also] how to think and how to be flexible in using many resources to resolve civic issues. It is not overstating the case to say that America's future depends on it." (Curriculum Standards for Social Studies. NCSS, 1994, xvi)

The mission of the National Council for the Social Studies (NCSS) is to provide leadership, service and support for all social studies educators. Social studies educators give students the content knowledge, intellectual skills and civic values they need to fulfill the duties of citizenship in a participatory democracy. The Council welcomes the opportunity to submit this testimony and to convey the conviction of the Council's more than 26,000 members-around the nation and the world-that social studies is an invaluable discipline that should be included in conversations about federal priorities and investments in education-especially during the upcoming debate around the reauthorization of the No Child Left Behind Act (NCLB).

NCSS defines social studies as "the integrated study of the social sciences and humanities to promote civic competence." Within the school program, social studies provides coordinated, systematic study drawing upon such disciplines as anthropology, archaeology, economics, geography, history, law, philosophy, political science, psychology, religion, and sociology, as well as appropriate content from the humanities, mathematics, and natural sciences. In essence, social studies promotes knowledge of and involvement in civic affairs. And because civic issues—such as health care, crime, immigration, and foreign policy—are multidisciplinary in nature, understanding these issues and developing resolutions to them require social studies education. These characteristics are the key defining aspects of social studies.

Powerful social studies teaching helps students develop social understanding and civic efficacy. Social understanding is integrated knowledge of social aspects of the human condition: how they have evolved over time, the variations that occur in various physical environments and cultural settings, and the emerging trends that appear likely to shape the future. Civic efficacy—the readiness and willingness to assume citizenship responsibilities—is rooted in social studies knowledge and skills, along with related values (such as concern for the common good) and attitudes (such as an orientation toward participation in civic affairs). The nation depends on a well-informed and civic-minded citizenry to sustain its democratic traditions, especially now as it adjusts to its own heterogeneous society and its shifting roles in an increasingly interdependent and changing world in the 21st Century.

Recently, the Partnership for 21st Century Skills ([www.21stcenturyskills.org](http://www.21stcenturyskills.org)) has emerged as the leading advocacy organization focused on infusing "21st century skills" into education. The organization brings together the business community, education leaders, and policymakers to define a powerful vision for 21st century education and to ensure that students emerge from our schools with the skills needed to be effective citizens, workers and leaders in the 21st century. A recent report from the partnership, "Results That Matter: 21st Century Skills and High School Reform" outlines a compelling framework for 21st century learning that focuses on the results that matter for today's high school graduates and suggests that the vision for 21st century learning embrace the following elements:

1. A continued focus on English, math, science, foreign languages, civics, government, economics, arts, history and geography;
2. The incorporation of 21st century content into the curriculum, such as global awareness, civic literacy, health awareness, and financial, economic, business and entrepreneurial literacy;
3. Teaching of learning and thinking skills;
4. Teaching of information and communications technology;
5. Teaching of life skills, such as ethics and personal responsibility; and,
6. The proliferation of 21st century assessments in education.

In order for any of this to occur, there must be assurances that:

- the curriculum for social studies is required in all schools, and at all grade levels on a regular basis;
- the human and financial resources required to provide this social studies programming are available to all schools; and,
- there are accountability measures for social studies in place at the school, district, state and national levels.

The National Council for the Social Studies strongly supports these findings and recommendations, and urges the Committee to consider both.

That is why we paid particular attention to a report released by the Center on Education Policy (CEP) on March 28, 2006 which focused on the implementation of NCLB. "From the Capital to the Classroom: Year 4 of the No Child Left Behind Act," is a comprehensive analysis of how the law is being implemented at the state, district and local levels. Based on a survey of 50 states, 299 school districts and 38 case studies of school districts, the report provides the most up-to-date information about the law's implementation and shares the opportunities and challenges that it has presented for states and districts.

While the report found that implementation of No Child Left Behind has brought positive results to schools nationwide, NCSS is troubled by one finding: One-third (33 percent) of school districts reported reducing time for social studies "somewhat or to a great extent" to make time for reading and math, while 29 percent said they had reduced time for science and 22 percent for art and music. This is clearly an unintended result of NCLB that must be addressed.

While we are familiar with Secretary of Education Margaret Spellings' assertion that "what gets measured gets done," we believe this attitude shortchanges our youth as teachers and administrators focus almost exclusively on achievement results in math and reading. The gradual elimination of social studies from the school day would adversely affect social studies educators, students, families, communities and citizens.

NCSS firmly believes that by incorporating a social studies curriculum into the school day, the reading and math skills of the students will actually be enhanced. For example, "Review of Social Studies Research and Literature, 1995-2005" (April 18, 2005), which was completed for a state social studies task force, highlights several key findings relative to instruction in the social studies that are worthy of note, and that those charged with formulating federal education policy should keep in mind:

- Young learners, in the elementary years, are capable of learning foundation knowledge and processes that are also needed for learning in middle and high school social studies.
- Using informational texts as a means to develop reading abilities is important for young readers, and encouraging older students to read a variety of texts \* \* \* leads to greater achievement.
- \* \* \* [A]ll national standards documents assert that effective programs must help students learn important content and processes, beginning in primary school grades and building civic competence within each grade, K-12.
- Assessments, especially those driven by accountability, determine to a large extent which studies receive time and emphasis in classrooms, what is taught to students, and which areas receive funding for materials and professional development.

These findings suggest that an emphasis on reading knowledge alone ignores the value of important content and analysis. Rigorous and relevant social studies curriculum can-and does-teach reading skills while imparting important knowledge and skills.

The District Facilitator of Social Studies in District 11 in Colorado Springs, CO recently analyzed data for elementary schools in this district of nearly 30,000. She noted a close correlation between high scores on state assessments in reading and those for the Terra Nova test, contracted through CTB-McGraw Hill, in Social Studies. This is an indicator that instruction in social studies, emphasizing vocabulary and reading skills, can lead to achievement in tested subjects-in particular, reading.

One state in which rigorous and relevant social studies high school curriculum has become a reality is Michigan. "To ensure Michigan's students have the skills and knowledge needed for the jobs of the 21st Century global economy, on April 20, 2006, Governor Jennifer M. Granholm signed into law a rigorous new set of state-wide graduation requirements that are among the best in the nation." (<http://michigan.gov/mde/0,1607,7-140-38924--,00.html>). Where once there was a requirement for 0.5 credits in civics, there is now required 3 credits of social studies—0.5 credit in civics; 0.5 credit in economics; and two others between U.S. history and geography and world history and geography. The state is also completing a revision of Grade Level Content Expectations for social studies, beginning with Kindergarten, to be presented to the state Board of Education in August.

As evidenced by the findings of the recent report from the Center for Educational Policy, NCSS knows that this emphasis is not present in all schools, districts or states. The report points to a widespread reduction in the amount of time spent on social studies. Such cuts are illogical when contrasted with research showing that exemplary elementary teachers have their students do more social studies and science reading than students in less effective classrooms ([www.readingrockets.org/articles/96](http://www.readingrockets.org/articles/96), p 2-3 of 10 ).

Further, the role social studies plays in encouraging responsible civic participation is irrefutable. Recently, the Civic Mission of Schools identified Six Promising approaches to civic education ([www.civicmissionofschoools.org](http://www.civicmissionofschoools.org)). The very first approach, based on research, shows that schools can help to develop competent and responsible citizens when they:

“Provide instruction in government, history, law, and democracy. Formal instruction in U.S. government, history, and democracy increases civic knowledge. This is a valuable goal in itself and may also contribute to young people’s tendency to engage in civic and political activities over the long term. However, schools should avoid teaching only rote facts about dry procedures, which is unlikely to benefit students and may actually alienate them from politics.”

It is obvious that the potential narrowing of the curriculum as an inadvertent consequence of the implementation of No Child Left Behind warrants the attention of educators and policymakers across the nation.

Powerful social studies teaching begins with a clear understanding of the subject’s unique purposes and goals. NCSS’s believes citizenship education is the primary purpose of K-12 social studies. Noting that concern for the common good and citizen participation in public life are essential to the health of our democratic system, it states that effective social studies programs prepare young people to identify, understand, and work to solve the problems facing our diverse nation in an increasingly interdependent world. Such programs:

- foster individual and cultural identity along with understanding of the forces that hold society together or pull it apart;
- include observation of and participation in the school and community;
- address critical issues and the world as it is;
- prepare students to make decisions based on democratic principles; and
- lead to citizen participation in public affairs.

Clearly, these programs are also important tools for imparting math and reading knowledge and skills. Social studies is a discipline that facilitates the teaching of a number of subjects and arms young people with the knowledge and skills they need to be effective and responsible citizens. The National Council for the Social Studies looks forward to working with you in the coming months on the important effort of reauthorizing the No Child Left Behind Act.

